The Builder.

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Building in the Argentine Republic.

CONSIDERING the heterogeneous nationalities brought together in the Spanish-American countries, it is not surprising that their methods in architecture and building should present a great contrast to those of European countries; though there is little of indigenous culture. Until quiet recently there have been no native architects in the Argentine Republic; and those who have now come to the front, or have been put there by friendly circumstances, owe their knowledge to the technical schools of France, Italy, and Germany. The terms engineer, architect, and contractor are but vaguely defined, and are often made to include locomotive engineers, railway, dock, and paving contractors, sanitary engineers, and land surveyors, each of whom is supposed to be able to do any class of work, not excluding churches and exhibition buildings of an ambitious nature. The designer's freedom is not fettered, as the following clause in the building regulations of Buenos Ayres will show:—"The style of architecture and decoration of the fronts is optional, provided that it does not offend public taste."

Under these circumstances it need hardly be said that the various designs which are produced are of a somewhat hybrid nature, but as "public taste" is as yet a negative quantity each work is accepted as a success, provided that the rain does not come through the roof, and the building produces a satisfactory rent. This last consideration (but not the former) may be taken as a foregone conclusion, as rents are very high, and any ordinarily constructed building should bring a return of 8 to 15 per cent. on the capital invested, whether it be for residential or commercial purposes.

Buenos Ayres, as the largest and most important city in South America, with a population, according to the last census (1895), of nearly three-quarters of a million, may be taken as leading the way in structural works in this hemisphere, and, accordingly, this city has been a happy hunting ground for foreign architects and engineers, viz., German, Italian, Swiss, Swedish, French, and a few English; but of late years Argentine jealousy has done much to curtail their privileges and emoluments, and even competent foreigners are fast being dispossessed of their appointments, after having successfully gone through all the initial and intermediate stages and troubles connected with the railway, building, gas, water, and other services. "Argentina for the Argentines" is now the motto, and, financially and technically, they have made but a qualified success of the Home Rule programme.

In the year 1850 there existed in Buenos Ayres only ten or a dozen houses of two stories, but as land increased in value the inevitable result has come about that now high buildings are being erected, with deep excavations for large cellars which often extend over the entire site. These cellars or basements are often two deep and well lighted, in many cases with electric light. The Argentines are very receptive, quick to seize upon any innovation, but the faculty of inception seems to have been hitherto denied them; hence all modern appliances, conveniences, and methods of construction are to be found in the city, but under foreign introduction and management. These influences have naturally produced some fine buildings, mostly of a strictly regulation type with a tendency to overdo detail, much of which, however, is very good, owing to the facility with which the external plastering or stucco is handled by the Italian workmen; this, as also every class of construction work, being now almost entirely in Italian hands. Stone is scarce and costly, and the bricks are extremely rough, though otherwise of good quality, hence the fronts of the buildings of any pretension are invariably plastered; plain wall space is not in accordance with native ideas, consequently every available opportunity is taken to run mouldings and put brackets, panels, and rustications wherever space can be found to put them. The lime and cement used for this purpose are good, and the climate seems to have but little deteriorating effect upon the work; an occasional coat of paint keeps the fronts in good condition. The streets are laid out chessboard fashion in squares of about one hundred yards, but a good deal of irregularity has hitherto existed in the dimensions and the angles. A give-and-take line is noticeable as regards the width (or rather the narrowness) of the streets, one square making up in increased or decreased narrowness for the deficiencies or excesses of its neighbour.

The greater portion of the external plaster detail owes its origin to Italian and French draughtsmen of the modern school, with all the richness characteristic of their facile pencils, which produce "free Classic" and Renaissance work in low relief; but they keep clear of the abominations of "incised ornament." They indulge, however, in innumerable pilasters and columns, with enormous parapets and meaningless pediments standing free in the air for a height of many feet; the side view of these tremendous shams has a truly ridiculous effect. It is a matter of compulsory regulation that the angles of corner sites should either be "rounded" or cut off at an angle of 45 degs., leaving a canted face of 6 ft. or 7 ft. This gives the opportunity for a special treatment, which is often effectively carried out. A custom of the old times of revolutions, and one which still prevails, is that of fixing iron gratings to the windows for security; the older type of grating is very severe and prison-like, the modern being more florid and pleasing; some good specimens may often be seen elaborately worked.

"Republican simplicity" (a misnomer in Argentina, where wealth is the only criterion of social worth) is shown by the curious juxtaposition of the houses. A large building, in many respects beautiful, may be seen adjoining a miserable tenement (perhaps occupied by a retail coal-dealer or a drinking shop of the lowest type) with the 4-in. ventilating pipe of the drain of the small tenement fixed against the side wall of the large house close to the front for a height perhaps of 60 ft. or 70 ft.; the owner of the small property having probably compulsorily had to buy the party wall rights of the upper floors of the neighbouring house, solely for the purpose of fixing the ventilating pipe. Cow-sheds and stables are often similarly situated or sandwiched between two commanding buildings, and this, too, in what may be termed "good streets," as there may be said to be no strictly residential quarter for the well-to-do middle classes. In nearly all the new buildings in the City the ground floor is given up to shops and warehouses, with a side entrance for access to the apart-

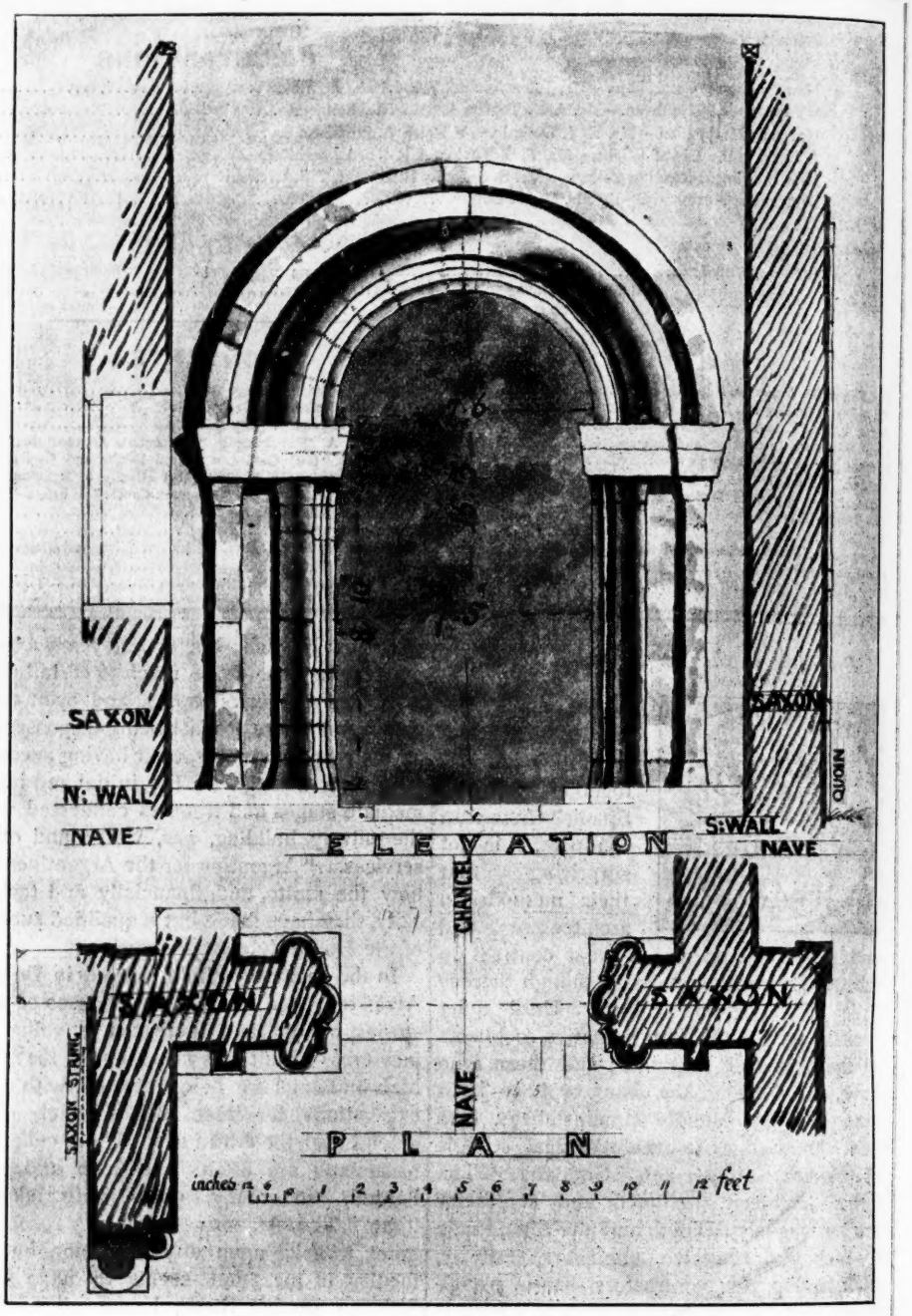
ments above, and in these apartments live many of the wealthy people of Buenos Ayres; the north end of the city is, however, gradually becoming a residential quarter for the very wealthy, where detached mansions and palaces only find a place.

Having thus stated the general conditions which exist, let it be assumed that an owner of a site wishes to build. Unless the house is to partake somewhat of the character of a palace, the owner does not seek an architect; but if he have no friend who is an "ingeniero," he seeks a master builder, or very often the humble bricklayer, and states his requirements. The builder thereupon seeks a draughtsman, mechanical or architectural, as may be, when a design is made, and generally accepted by the owner off-hand. Two copies on tracing-cloth (tracing-paper is almost unknown) are then presented at the municipality, together with a "solicitud" and specification. This latter consists of a printed form to be filled up with a few bare details, such as the size of rafters, nature of the floors and roof, strength of the mortar, &c. Several blank sheets of Government stamped paper are also required, and the "solicitud" winds up with the pious wish, "Dios guarda al Señor Intendente."

The plans, which are to 1 in 100 scale (say $\frac{1}{8}$ in. scale), with detail of front to 1 in 50, do not show the constructive material, as sectional parts, whatever be the material, are all coloured red. After a lapse of two or three weeks, if these plans do not "offend the public taste" and do not infringe the building regulations, they can be taken out by the owner on payment of the municipal dues, which are rated by the frontage to the street, generally irrespective of other conditions.

The contract for a lump sum is then ratified between the owner and the builder. When the front wall is one mètre above the ground the builder must give notice to the municipality to this effect, in order that it may be inspected. In no case must this portion of the work be proceeded with until the inspector has given his written approval. This formality having been complied with, as a rule no further inspection takes place, the owner being in a great measure safeguarded from bad material or faulty construction by constantly having the advice of his building friends, who, to do them justice, have with natural intuition a keen perception of the quality of work and material with, perhaps, a less keen perception of the quality of justice when it comes to paying the builder the amounts and at the times formerly agreed upon. Disputes are necessarily not infrequent, generally ending in the discomfiture of the builder. It is rarely worth while for him to contest the case, and arbitration is as yet in its infancy in matters pertaining to the building trade. Moreover, the foreigner knows that he will probably not be so well represented as his opponent, for although the latter may possibly be inadequately equipped either with logic or facts for the controversy, the scale may be turned by the absence of impartiality on the part of the judge.

The fact that the contract is generally for a lump sum implies the absence of bills of quantities, which are not customary. The estimate is prepared with fair accuracy at so much per square mètre of brickwork, one brick thick, including necessary excavation, and per mètre of floor, roof, and plastering to walls and ceilings, labour and material included; whilst the doors and windows

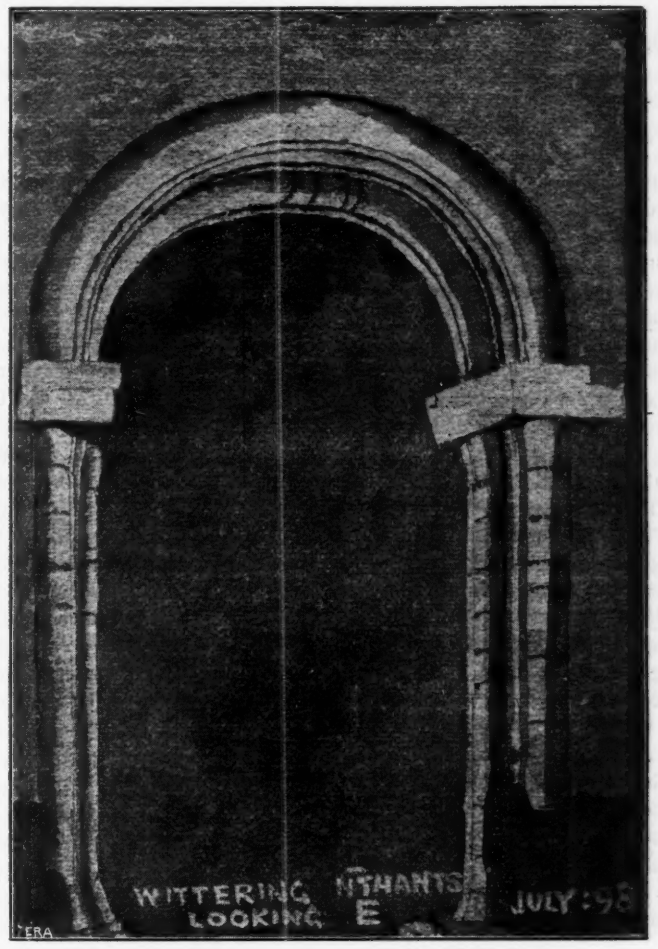


[See facing page.

are taken by number, including fastenings, glass, and painting; plumbing generally for a lump sum. Papering is not much in vogue except for large houses, as it is considered to harbour insects, which are ever present. The walls are, as a rule, distempered in light colours, and finished with stencilled lines and patterns as ornamental borders. The bellhanger is quite unknown. In the larger houses electric bells are used, but in the smaller properties a caller may, in the absence of a knocker, open the door and announce his or her presence by clapping hands.

In the city it is compulsory to build the front of the house in mortar (composed of lime, sand, and brickdust), and in some parts of the city mud may be used instead of mortar for the interiors, and even party walls. This mud is of a particularly tenacious and adhering kind, and serves its purpose well enough where economy is an object; it certainly is convenient to obtain so much material ready to hand, with only the expense of scraping together and mixing it with water. A compromise is often effected by building the foundations with mortar, using mud for the rest of the work. Damp courses are stated in the regulations to be necessary, but this remains comparatively a dead letter; the Italian workmen often make a line by passing a tar brush round the wall to give the idea that a course of bricks has been laid on a tar bed; a proper asphalte damp-course is seldom put, and no other method is known; as a result the majority of walls are very damp, more especially as many inferior bricks will find their way to the work, and no discrimination is used by the bricklayer in selecting them. These remarks, of course, do not apply to works undertaken by the better class of builders, of whom there are many (though they never leave the central part of the city), neither to works where an architect is employed, as in such cases the "director," as he is often called, is apt to be over-exacting, knowing the class of men with whom he has to deal.

The native brick is 1 ft. by 6 in. by $2\frac{1}{4}$ in., but of rough form and face, hand made, and without frog; a thick bed of mortar or mud is required to get them bedded properly. There are three qualities—the first very hard, the second equal to English place bricks, and the third of no value except for filling up; these are used principally for the neglected kitchen, being known technically as "wall bricks" (*i.e.*, suitable for garden walls and such purposes), for the absence of frost prevents the rapid disintegration which



would occur in less favoured countries. The prevailing colour of bricks is a reddish brown, which would combine well with the grey or red granite of the district; but the inveterate dislike to anything except stucco (induced by the rough surface of the bricks) has prevented any attempt being made to obtain a picturesque effect, which should at any rate not be unacceptable in the country districts. It is also compulsory in the city that every front be colour-washed when not painted, pure white not being allowed. The expense of working the granite also militates against its employment, for although granite curbs and setts are much used, the native mind would revolt against the barbarity of leaving it unpolished for building purposes. Thin marble slabs for plinths, architraves, and fascias are much used, and are cheap. Marble sills and steps are also common and serviceable; fine specimens of marble staircases and linings are also to be met with, and can be produced cheaper than in England. The small surplus pieces of marble are used for paving entrances, plaques for street numbers, and such purposes, at which the Italians are adepts.

Pitch pine, white pine, and spruce are largely imported and are not dear; the country supplies a variety of hard woods of various colours, some harder than oak and apparently as durable, into which it is impossible to drive a nail without boring a hole first, otherwise the nail would double up after entering about half an inch. These timbers can be cut to large sizes, and are suitable for rafters, joists, door frames and sills, as also for heavy staging for bridge and dock construction. They would also answer admirably for half-timber work, but this is quite an unknown art in these latitudes. Cedar is also produced in quantities, and is very easy to work. This is much used for principal doors, venetian shutters, and interior fittings.

The commonest form of paving for courtyards and passages is that of red tiles, which are 8 in. by 8 in. by $\frac{5}{8}$ in.; the best qualities come from Marseilles, but very fair quantities and qualities are made in the Argentine Republic, and are by no means expensive. Imitation mosaic tiles of cement, in various designs and colours, are also made by the resident Italians, having a good effect considering their cheapness; they are also found to be durable. The ubiquitous "Napolitano" also runs the brass and iron foundries, so that every requisite for finishing a house in an effective manner, whether cheap or expensive, is ready to hand, although the effectiveness is often but temporary, as any strain or rough usage will prove the old adage of the cheap being dear.

ALL SAINTS, WITTERING.

THE choice by the British Archæological Association of the City of Peterborough as the headquarters for this year's Congress could not but be a good one. It is not too much to say that within a radius of some ten miles from Peterborough Cathedral the whole body of English architecture is as well represented as it could possibly be. No wonder that the Early Gothic revivalists made this part of England their special architectural hunting ground. At this day a student of the history of the art of Gothic architecture need not go much further than the area above-named for the most perfect and complete examples of his subject. The architecture hereabouts is of so exquisite a character that the archæologist is drawn out of himself irresistibly towards the architecture which enshrines his objects.

Examples of first-class design in all the various periods prevail on every side. It is only to a small single example of early work that it is proposed to call attention here—namely, to the chancel arch of the Church of All Saints, Wittering, Northamptonshire. The accompanying plans and sketches will perhaps make plain the dimensions and details of this remarkable work.

The nave and chancel of this little church are of undoubted Saxon design and workmanship, but it is the chancel arch only that is to be alluded to here. The drawings show that the archway has an opening of 7 ft. 5 in. in width, and a height of 10 ft. 4 in. from the lower bed of the base to the spring of the arch, which is semicircular.

The width of the chancel is 12 ft. 7 in., and that of the nave 16 ft. 6 in. The centre line of the archway is a few inches out of the centre line of the chancel, the walls of which are not parallel with those of the nave. Centrally in the soffit of the opening, both in the jambs and arch, there is a big semicircular moulding, and on each face of the wall another semicircular moulding runs up the jambs and round the arch. In the soffit between these mouldings there is a shallow concave moulding with fillets on each side of it; this also accompanies both the jambs and arch. Beneath the spring of the arch there is a great plain bevelled impost. On the face next the nave a pilaster strip runs up the wall and surrounds the arch, forming a hood moulding. There is not space on the side next the chancel for this feature, and it is altogether absent there. The arch mouldings do not follow those of the jambs anything like accurately, either in position or size. For base and capital the jamb mouldings are simply extended upwards and downwards, and this is applied even to the pilaster strip. On the south side next the nave there is a vertical break in the impost, and though this is not present on

the north side, there are indications that both sides were alike in this respect. Unfortunately, the jointing of the masonry is too thickly covered by whitewash to be seen. There is a suspicious look about the faces of the imposts, inclining to the suggestion that there may have been originally some form of moulding on them. There is a degree of rudeness in the work generally which points to a lack of skill, according to our present standard of work, but the innocent struggle after architectural effect has its charm. This example of early building contains the well-defined characteristics of the Saxon style, and is one amongst many in the district of Peterborough which vindicates the appellation of "style" to the work immediately preceding the Norman Conquest.

To pronounce on the probable date of this arch would be somewhat risky, so many are the pitfalls which still beset accuracy in this direction. It may, however, be safely said that there is an innocent simplicity about this work, and yet withal, a true feeling for architectural effect, not to be seen in the tower arch at Barnack, where it looks as though the mason had used much effort to produce elaboration of moulding, the true value of which he had not been schooled in. The Wittering example shows evidence of contentment with bold and simple form. These are qualities which perhaps bespeak an earlier date for the work at Wittering than that at Barnack. C. LYNAM.

NOTES.

The Trades union Congress.

THE reports of the Trades Union Congress chronicle the usual amount of unconscious humour in the proceedings. The irony of things is finely illustrated in the fact that the very same page of the *Times* which contains the report of the resolution expressing sympathy with the Welsh miners, condemning the "arbitrary attitude of the colliery proprietors" and their "humiliating terms which would most probably be rejected," contains the report of the acceptance of these terms by the miners by a majority of two to one.* In the Presidential address we of course expected to find the Workmen's Compensation Act condemned because it did not go far enough and did not extend its provisions to all trades and occupations whatsoever, and we are not surprised to be again told that the liberty to contract out of the provisions of the Act is "immoral" (in other words, it gives a man a choice of action instead of nailing him to a system); but there is a new advance made, in the condemnation of Friendly Societies, which it now appears are "usurping the functions of the State":—

"If it was logical for the State to interfere to reduce the hours of labour, and to insist that special regard should be paid to the safety of life and limb on the ground that the national prosperity depended on the well-being of the worker, the necessary corollary was that the State should care for him in times of sickness, in order that his productive powers might again be at the disposal of the nation."

The State is to forbid the workman working longer than he likes to; the State is to see that he gets as high wages as he wants, and the State is to take care of him and cocker him up when he is ill, his life being more precious to the State than that of any other class of persons. Apart from any other consideration, it seems surprising that any group of men should have such a want of manly spirit as to contemplate, even in theory, such a system of nursing as the trades-union leaders hold up before them as an object to be desired. The eight hours movement is more rampant than ever. "Seeing that an eight hours working day will lessen the number of unemployed, improve the quality of the work, and increase the health and intelligence of the workers" (there is certainly room for the last-named improvement), "this congress declares that the time has arrived when the hours of labour should be limited to eight per day in all trades and occupations in the United Kingdom." The logic is too delightful. Work is the source of national wealth; let us all agree to do less work, and then we shall all be richer. Possibly when this programme has been carried far enough to double the cost of all the necessaries of life, and drive all our manufacturing trade out of the Kingdom, the awakened "intelligence" of the eight-hour working man may arrive (too late) at the comprehension of Æsop's fable of the Belly and the Members.

* Probably many of the minority saved their consciences by a vote which they pretty well knew would be out-voted.

The late Charles Garnier.

MDME. CHARLES GARNIER and her son have presented to the State all the sketches and models for the decorations of the Paris Opera House. Among these is the model of the ceiling of the auditorium, by Lenepveu; the sketches for the ceilings and panels of the grand foyer, by Baudry; those for the staircase decoration, by Pils; those for the "foyer du danse" by Gustave Boulanger, and the studies for the paintings executed by Elie Delaunay in the small salons at the end of the grand foyer. In conformity with Mdme. Garnier's wish all these sketches and models, which form a very valuable collection, are to be placed in a gallery in the library of the Opera House, where there is also to be placed a medallion portrait of the late architect. Many of Garnier's friends were desirous that his statue should be placed on the open space in front of the building to which he devoted twenty years of his life; but it is considered that this would be an interference with the view of the building which the architect himself would have disapproved of. It was to avoid any interference with the total effect of the façade that Alphand refused to allow any plantations down the sides of the Avenue de l'Opera.

Railway Extension in Paris.

THE "Ceinture" railway company is carrying out important works with the view of doubling the existing line between Courcelles and the Trocadéro. The work will include a large tunnel at Passy, to emerge near the Seine, opposite the Île des Cygnes. The line will be carried across the river on an iron bridge and terminate in a new station at the Champs de Mars. This is for the Exhibition; after that is terminated, the railway will join the Invalides station. The railway company "de l'Est," on its part, is enlarging its station, and has secured a number of houses next the Rue d'Alsace and the Faubourg St. Martin, with the view of forming luggage rooms and a "Douane" on their site, while the arrival platforms are to be extended as far as the galleries opening on the Place de Strasbourg, but without interfering with the façades of the latter. The work of enlarging the Gare de Lyon is also being carried on with great activity. The old station has now almost entirely disappeared, and three new "halls are being erected for the arrival and departure of suburban trains, while the old façade towards the Rue de Lyon and the Boulevard Diderot will be replaced by a fine building erected at a cost of 2,000,000 francs.

Carnarvon Water Supply.

FROM Dr. Wheaton's Report to the Local Government Board on the sources of water supply for Carnarvon, we learn that for some years past the subject of the unsatisfactory nature of the water supplied to the borough of Carnarvon, more particularly its liability to pollution by liquid refuse from the village of Rhyd-ddu, has been before the Board. Dr. Wheaton's Report gives the particulars. The water supply is mainly from the river Gwyrfai; the whole of the valley above the intake is occupied by farms, and every farm-house is on the banks of a stream discharging into the Gwyrfai. Drainage from the farm fields passes into the river or its tributaries, and many of the houses have privies built of loose stone on or near the banks. As to the village of Rhyd-ddu, it is stated that the whole of the liquid refuse from this village is discharged into the river above the intake for Carnarvon, either directly, or indirectly by means of rubble drains or surface channels on the road side. The village is not sewered. The remedies suggested in the Report are as follows:—

"1. The thorough sewerage of the village of Rhyd-ddu, and the disposal of the sewage in such a manner as to avoid any risk of pollution of the river.

2. The scavenging of this village at frequent and regular intervals, in order to put an end to the throwing of the contents of pail closets, of privies, or of household refuse, into the stream.

3. Frequent inspection of all farms and dwellings upon the gathering ground. The disposition of all liquid refuse from dwellings, farm-yards, manure-heaps, and the like, in such fashion that these matters shall not foul streams. The prevention, as far as possible, of manuring of land in the immediate neighbourhood of the lakes and streams.

4. The provision of movable receptacles for fæcal matter for all dwellings upon the gathering ground, in order to prevent the direct fouling of streams by fæcal matter. Strict attention to be directed to the method of disposal of contents of such movable receptacles.

5. The diversion of all water passing through Glan-r-afon quarry from the river above the intake.

6. The diversion of all surface water from the main roads from the river.

The last two measures require works of engineering of considerable difficulty. Filtration of the Carnarvon water supply has been recommended as a precautionary measure. It is doubtful, however, whether filtration, as ordinarily carried out, can, in the present circumstances of that supply, be trusted to secure a uniformly wholesome water."

Spitalfields Market.

SIX or seven years ago the Spitalfields Market Enfranchisement Association was formed with the object of securing the private rights of the market. Charters in respect thereof were granted by Charles II. in 1682 to John Balch, and by James II., six years later, to George Bonn, for sales on three days every week, the grantees being the predecessors in title of Sir Julian Goldsmid and others, who by a judgment of the Court of Appeal on December 18, 1883, which after several days' hearing was upheld by the House of Lords,* were declared to

* See Law Reports, 1883-4, Goldsmid *v.* Great Eastern Railway Company, and Great Eastern Railway Company *v.* Goldsmid and Others.

be entitled to hold markets for fruit and vegetables twice a week, without interference. The London County Council recently decided to instruct their Parliamentary Committee to seek legislative authority for the Council to acquire by agreement, or compulsorily, the freehold and other interests in the market. It was represented that the market area is quite inadequate for its existing purposes, and that thereby the ordinary traffic, especially in Commercial-street, is greatly hindered. Thus, it seems, municipal ownership and control will supplant private ownership. The street market is at present held on a site to the west of Christ Church, lying within the confines of Lamb, Red Lion, Brushfield (formerly Union), and Crispin-streets. It is worthy to be noticed that the "Spital-square," named for the market site in some correspondence between Charles II. and the Sheriff of Middlesex, and in the consequent letters patent of July 29, 1682, to John Balch, his heirs and assigns, for a market thereon, is not the place so-called at this day, namely, Spital-square, formerly Spital-yard, in Norton Folgate, the old Lolesworth, or Roman burial-ground, where in 1197 Walter Brune, Sheriff, and his wife, Rohesia, founded a priory and hospital of Christ and St. Mary for canons regular of St. Augustine. It forms part of the ground, in the position we describe above, which was built over for housing the Protestant refugees to England in and after 1685, though that settlement retained the name of "Spital-square" until about 1720. Hatton (1708) cites "Spital-fields Market"; in two maps of 1706 and 1720 the present market space is named "Spital Market" and "Spitalfields Market," respectively. The (old) Mathematical Society removed (1735) from the "Ben Jonson's Head," Pelham-street to Crispin-street, and remained there until 1845, when they made over their books and records to the Royal Astronomical Society.

Western Livelands, Stirling.

WE read that this interesting old house is about to be pulled down, for rebuilding, by its recent purchaser. It is situated in St. Ninians, just outside Stirling, close to the field of Bannockburn, and was occupied by General Monk when Cromwell besieged Stirling Castle. The house stands in the midst of some fine old beech and walnut trees, with a beautiful view of the Ochils, and the wide level of fertile land through which winds the Forth. On its front is the date "1629," but the house is believed to have been built long before. Thirty-three years ago Mr. James Morrison, having acquired Western Livelands from the Murrays, made some alterations in the interior of the house, and removed a wooden staircase leading up to the garrets. In doing so he discovered a passage, lighted at the end by a small window. On the sides of the passage—conjectured to have been a secret oratory or chapel—were found paintings of ten Sibyls, for the most part whole and in good state, and beneath them sets of sibylline verses, in black letter and somewhat defaced.* The property, a portion of which is known as Chapel-croft, is supposed to have appertained to the adjacent convent of the Black Friars (whose site is now traversed by the railway) which the Lords of Congregation dismantled during the regency of James V.'s widow, Mary of Lorraine, and which was the burial place of the mysterious individual, by some considered to be Richard II., who died in Stirling Castle, in 1419—as is related by Fordun's continuator: the inscription on his tomb has been preserved.

* Three of the Sibyls almost exactly correspond with three of the seven depicted in a very rare small quarto volume printed at Frankfort in 1531: the comparison was made at the time of their discovery.

Names of Scotch Architects.

IN reference to our note last week touching on the difficulty of getting correct information as to the names of deceased architects, an Aberdeen architect writes to us that he must have been misunderstood in regard to the information he gave to a representative of this journal about Gibbs, and that what he stated was that the architect's name was originally and correctly "Gibb," however it might have been altered afterwards. Our correspondent adds—"Gibbs, Watts, and Adams are English names; the characteristic Scotch corresponding names are Gibb, Watt, and Adam"; and he implies that Scotchmen bearing these names assumed the *s*, or had it added to their names, on settling in England; though he admits that Robert Adam was an exception. As bearing on this point, the constant recurrence of the mistake, among English writers on architecture, of referring to Adam as "Adams," seems to suggest that there is a kind of tendency in England to add an *s* to this class of Scotch names. In regard to Gibbs, we find that both in Gwilt and in the Dictionary of Architecture he is given as "James Gibbs," without any hint that the name had ever been differently spelt. However, our correspondent may be right, and at all events we have evidently done him an injustice in attributing to him carelessness or ignorance as to Gibbs's name.

The Salons at the 1900 Exhibition.

THE Directors both of the Old and New Salons at Paris are much disturbed at the discovery that the Art Palaces for the 1900 Exhibition, in which they will then hold their respective exhibitions, do not offer nearly as much wall space as they have been accustomed to, and that there will be no space for very large works, at all events in any numbers. It seems odd that this should not have been taken account of earlier, and a calculation made of the precise wall space required, though our own opinion would be that the Salons (the "Old Salon" especially) would rather gain than lose by being compelled to somewhat reduce the number of their works and to dispense with the portentously large canvases which they have been in the habit of encouraging. This however is not, of course, their view of the case, and the two opposing Societies intend to make a joint effort to bring pressure to bear on the authorities, with a view of having the accommodation of the new galleries enlarged.

The Advertisement Pest on the Continent.

ACCORDING to a note in the *Pall Mall Gazette*, the inhabitants both of Germany and France are beginning, like many persons in England, to rebel against the increasing defacement of everything by advertisement. It is complained that the Rhine is becoming a vast advertising medium for German wines; while a leading French journal asserts that unless some order is taken, the line from Marseilles to Dunkerque will soon run between two rows of hoarding proclaiming the merits of patent foods. It should be encouraging to our own "Society for Checking the Abuses of Public Advertising" to find that there is a strong anti-advertisement feeling getting up on the Continent also; and perhaps Mr. Richardson Evans may be able to see his way to starting branch societies in Germany and France, to co-operate with and extend the influence of his own.

ON ARCHITECTURAL INSCRIPTIONS AND INSIGNIA.

IN these days of public improvements of all kinds, of revived interest in architecture, and of the careful study of all artistic details, it is somewhat strange that the subject of architectural inscriptions and insignia has received so little attention, either from public bodies and private persons engaged in building, or those who are the occupiers and users of modern edifices.

Any extended and careful examination of the public and private buildings of London and the provinces will reveal a very great number of sins, both of omission and commission, in this matter, to some of which it is proposed to call attention in the following remarks.

To take the case of omissions first. Would not many of our public buildings be the better for inscriptions and insignia not only signifying their origin and uses, but also giving some indications of their history?

It may, perhaps, be said that it is the duty of the architect to make the purpose and intention of his building at once apparent to the educated eye by means of its style and general form and proportions, without the use of inscriptions and devices; but in these days, when every possible style of architecture is used for every possible purpose, this is very difficult, if not altogether impossible, and a timely inscription or easily comprehended symbolical device would often not only be of service to the ordinary citizen or "man in the street," but might also be an æsthetic addition to the structure itself.

It may here be remarked, in parenthesis, as it were, that until the inscription was recently placed upon its pedestal, the Grinling Gibbons statue of James II. in Whitehall-gardens was popularly supposed to represent Julius Cæsar, an idea which the Latinity of the new lettering may perhaps not altogether tend to dispel.

There are, of course, a few buildings which at once proclaim themselves for what they are, without the aid of any inscription; as for instance Newgate, massive, black-browed, and sullen, which, with its frowning and unpierced wall, could not be anything else but a prison; nor, even if it had the Dantean "Lasciate ogni speranza voi ch'entrate" over its portal, speak more eloquently of punishment and doom. Then, again, the façade of the Natural History Museum, with its multitude of details ascending in due order from the molluscs of its basement panels to Man himself in adoration on its highest gable, tells at once its purpose to the intelligent spectator. One might even, perhaps, go as far as to say that the gloomy interiors and mazy passages, and rooms, so difficult to find one's way *out of*, that we find in the Law Courts, are, like Dickens' "fog in the Court of Chancery," eminently typical of the mysteries enshrined. But these and similar instances are much too few and far between, and it is quite possible for the stranger to be in search of some of our public buildings and to pass them by for want of a timely inscription or sign to guide him. It is not in every case necessary that the structure should be broadly labelled after the manner of a scrawl on a schoolboy's slate, with its legend of "This is a church"; and often heraldry or the use of artistic symbolism would be sufficient; as, for instance, in the case of the College of Arms, on the front of which the inscription is almost superfluous in the presence of the wealth of blazonry. There is also the very artistic and characteristic frieze showing the processes of the manufacture of cutlery, which is sufficient by itself to identify for us the Cutlers' Hall in Warwick-lane. This design possibly and probably owes some of its vividness and force to the fact that its designer, Mr. Benjamin Creswick, began life as a working cutler himself in the good town of Sheffield; but we may also see another good example of his artistic craftsmanship in the similar

frieze illustrating the history and mystery of the art of hat making, which we find over the shop of Mr. Henry Heath in Oxford-street. This latter, together with its accompanying Rubens and Gainsborough portraits in their frame of wrought-iron, surely forms a better style of decoration and advertisement than the colossal gilt "topper" that has too often served the purpose in such a situation. It is to be regretted that more inscriptions and insignia like these are not to be seen in our streets, in place of the banalities and enormities that offend the eye in every thoroughfare. Some few examples of the right thing might, of course, be quoted, but still the majority of our buildings, public, business, or private, are either left unrecognisable or spoiled by the over-zealous efforts of the ubiquitous advertiser, to whose sins of commission we may again refer later on.

In the case of public buildings it is often the custom to place under or within their foundation-stones a collection of coins of the realm, presumably for the information and interest of posterity, but as the usefulness of these cannot commence until the destruction of the building, it would perhaps be better to spend the money in providing more information on the outside of the stone which would be of perennial interest, and of service to both the current and future generations. A form of inscription that was more prevalent in the seventeenth and eighteenth centuries than it is now might also be revived with advantage, and that is the dating of private houses of all classes, from the cottage to the mansion, and giving also upon their walls information as to their original owners and builders. The ancient existing examples of this practice have been of the greatest interest and usefulness to the antiquarian and the genealogist, and often also to the student of art; and it is only reasonable to suppose that modern ones of the same kind will be equally so to our descendants in the future. Inscriptions recording rebuildings, alterations, &c., should also be much more frequent than they are, and would help to keep clear the stream of that history which we are all of us, whether we recognise it or not, assisting to make every day, and much of which, like perfection, is made up of things which though apparently trifles in themselves, are yet parts of a concrete whole. In this connexion it may also be remembered that it is often the more humble and comparatively unimportant structures and works of art that last longest, as they are less likely to excite the greed of the spoiler or the prejudice of the iconoclast.

Another form of desirable architectural inscription is that which is made when the architect *signs* his building in the same manner that a sculptor places his name on the base of his statue, or the painter his autograph in the corner of his picture. This formal signing of buildings is, curiously enough, very rare in this country; which is the more to be wondered at in an age of advertisement and when there are but few men to be found who do not care to receive due credit for their achievements. This rarity surely cannot be caused by our architects being ashamed of the buildings they erect? If so, then the practice of architectural signature would possibly be a salutary one for the advancement of the art itself, and architects would be the more anxious that their works should be worthy of the names appended to them. The public would also know whom to blame in the case of an egregious failure, and whom to acclaim and give further opportunities to in the case of constructive and artistic success. We know of a few cases of deliberately signed buildings, and are tolerably certain that in none of them has the architect had reason to regret his signature.

Having thus considered some inscriptions and insignia as they might be, but are not, we may now turn to some of those which are, but should not be: beginning notice of them with the almost axiomatic dictum that every inscription or device upon a building should, if possible, not only be designed by the original architect, but also form part of the original design, rather than be added as an afterthought. Neglect of this leads to many of the eyesores we so constantly come across, in which we find lettering and insignia sometimes totally out of harmony with their surroundings, and sometimes destroying entirely what was previously perhaps very good. Respecting the first, most of us can probably call to mind Roman lettering on Gothic structures and vice versâ, to say nothing of inscriptions placed in inappropriate positions, or by their size destroying the scale of the building on which they have been placed by owners too ignorant or too apathetic to get skilled advice on the subject from the original designer of the whole. The instances of utter destruction of artistic effect in this manner occur principally in business premises, where the desire for advertisement overrules all other considerations. Each man tries to outshout his neighbour with colossal inscriptions, until we have great gilt letters 8 and 10 ft. high stretching across our street frontages, to the entire concealment of architectural details on which perhaps the very persons who cover them up thus ruthlessly have spent many hundreds of pounds. It may be doubted whether these enormities benefit business at all, while their cost is large, and they are a standing offence to the educated class which is happily growing larger every day. If these staring advertisements are, however, of any benefit to their producers, they might be at least confined to their more legitimate place on the ephemeral hoardings, and not be allowed to detract from permanent architectural beauties.

We are always calling upon our architects to give us better and more beautiful buildings, but we can hardly expect any man to put the whole of his mind and skill into work that stands such a good chance of being thus ruined and disfigured as soon as it is exhibited to the public gaze. What sort of works would our painters be likely to send to Burlington House if, when the galleries were opened, it was found that the public could only see them through a grille of lettering announcing the merits of the last new brands of soap and pills? What are the feelings of the architect when he sees, as he does daily, his work thus treated may be better imagined than described.

The hideous "sky-signs," set up to shut, if possible, a little more of the broad light of Heaven from out of our crowded streets, we have of late years somewhat abated, but, alas! only to replace them with the fresh horrors of the electric "winking" signs which make night hideous, and the spectator almost delirious as he waits yet once again for that i to dot itself as the long dash spreads, comet-like, beneath the barbaric word!

PROGRESS IN SEWAGE PURIFICATION.*

FROM time to time the world is startled by the announcement that some wonderful discovery has been made which is calculated to revolutionise existing methods of manufacture, to open up new industries, or to afford facilities hitherto unobtainable for achieving some desirable result. It often happens, after the first burst of applause has died away, some critic comes forward to question either the value or the originality of the alleged discovery. While we should be careful not to disparage the labours of those who have achieved success in a field of research in which others have toiled without any apparent result, we are quite entitled to satisfy ourselves that if praise be accorded it is well merited, and that the alleged discovery is really a step in advance which will promote the cause of science or the well-being of the community.

We have heard a great deal within the last year or two about the advances which have been made in sewage purification, and it is, therefore, well worth considering in what these advances really consist, and by whose labours and researches they have been brought about.

At the Congress of the Sanitary Institute at Leeds in 1897 one of the papers read on the subject of sewage purification included a description of the circular deep tanks in use in Dortmund in Germany, and the author of the paper distributed lithographed copies of the drawing of these tanks to the audience, apparently under the impression that they were a novelty. All engineers who are conversant with the literature of sewage purification were aware that these tanks had been fully described in Mr. Santo Crimp's admirable work on sewage disposal works, published in 1890, and that they were no longer a novelty; but comparatively few persons are aware that even before these tanks had been either designed or constructed the same principle had been applied to the clarification of sewage.

In May, 1885, Mr. W. H. Hartland, of Glasgow, took out a patent for the purification of water and sewage, which embraces amongst other features a type of tank which embodies the same principle as the Dortmund tank. In the words of the patentee, "the process consists mainly of settlement, but under somewhat peculiar conditions, or what I will term equilibric subsidence, under which the full effect of the laws of gravity may be obtained in freeing a liquid from suspended impurity." The form of tank which Mr. Hartland patented differs from that used at Dortmund. He used a rectangular tank sunk to a considerable depth below the level of the sewer invert. This tank was provided with two vertical shafts or pipes fixed at the opposite ends, and carried up to the level of the sewer invert. The tank was worked continuously, and, owing to the depth to which it was sunk, the liquid in it was under pressure resulting from the head of water in the vertical pipes. The sewage flowed down one of the vertical pipes into the tank, and, after passing along its entire length, it again flowed up to the surface by the second pipe, passing out of the tank at the same level as it entered it, while the sludge was periodically drawn off from the bottom. But in both the Hartland and the Dortmund tanks the principle is identical; that is to say, the liquid containing the suspended matter is first made to flow in a downward direction to a considerable depth, and before it can escape it is compelled to rise again to the original level, leaving behind it the finely-divided particles of suspended matter, which will not rise with the liquid.

In the year 1887 the author of this paper made the acquaintance of Mr. Hartland, and by arrangement with the latter a trial apparatus, having model tanks constructed in accordance with Hartland's patents, was erected in Kingstown, County Dublin, and a series of practical tests was undertaken by the author. These experiments were described in a paper read before the Institution of the Civil Engineers of Ireland on December 5, 1888, and the paper will be found in the "Transactions" of the Institution.

When the author read 'he description of the Dortmund tanks in Mr. Santo Crimp's work he at once recognised their value from his own experience of the results arrived at by the Hartland tanks, and as the form of tank used at Dortmund was somewhat more simple than that adopted by Hartland, while the principle of both was identical, the author constructed Dortmund tanks for the sewage purification works at Dundrum, which were designed in 1891, and described at the Congress of the Royal Institute of Public Health, held in Dublin in 1892. The paper will be found in the "Journal of State Medicine," vol. I., October, 1892. When, therefore, in 1897 this principle was put forward as a new departure in sewage treatment it was, as a matter of fact, more than twelve years old. It would be wise for all those who take up the question of sewage purification to make themselves conversant with its history. If they were to do so, they would find that there were clever chemists and able engineers engaged upon this problem when many of us were still in our cradles, and that, although they did not recognise the labours of ærobic organisms or give us a true explanation of the action which takes place in a filter, they had a very practical acquaintance, not only with the difficulties of the sewage question, but with the lines upon which it would be possible to deal with it successfully. Take, for example, the valuable series of Reports published by the late Dr. Angus Smith. How many of our more modern chemists take the trouble to peruse them or to study his experiments on æration?

But in the present short paper the writer desires to allude more particularly to the labours and the writings of the late Mr. Bailey Denton, whose first work on land drainage was published in the year 1854, and who from that time until his death contributed a series of most valuable additions to the literature of sewage treatment. Nor were his exertions confined to literary productions, for as all engineers know he designed and carried out a great number of extensive sewage disposal works, to the principles underlying which the writer desires particularly to draw attention. In 1880 a brochure appeared from the pen of Mr. Bailey Denton, entitled "Ten Years' Experience in Works of Intermittent Downward

* A paper read by Mr. W. Kaye Parry, M.A., A.M.Inst.C.E., at the Dublin Congress of the Royal Institute of Public Health (Engineering and Building Construction Section).

Filtration." This little book is worthy of more attention than it has received at the hands of some recent writers.

At present we are expected to accept the so-called bacterial filters as the real solution of the sewage problem. We cannot take up a professional journal without hearing something about them, and about those who are trumpeting forth their virtues, and who claim credit for having originated them. Time alone can show whether these filters really constitute the best and most economical means of purifying sewage. Into this controversy the writer does not at present intend to enter; but it is worth while to stop and ask whether these bacterial filters are really new, and in what respect do they differ essentially from the land filters the use of which Mr. Bailey Denton advocated. The latter selected land of an open porous character; he prepared the surface carefully, and divided it up into a number of plots; each plot was surrounded by a bank, and was as level as a croquet ground or a lawn-tennis court. These plots were all carefully and thoroughly underdrained to a depth of 6 ft. by a series of herring-bone drains connected with a central drain by which the filtrate was conveyed away. The sewage was turned on to each plot alternately, and it was allowed to filter through the porous land until it reached the under drains; each plot was allowed an interval of rest after it had been working for a certain number of hours. According to Mr. Bailey Denton's own words, the process was one of filtration in a downward direction carried on intermittently. It is most important to remember that he lays the greatest stress on the absolute necessity for the intervals of rest.

He writes as follows: "In speaking of intermittent filtration . . . . I refer to the concentration of sewage, *at regular intervals*, on as few acres of land as will absorb and cleanse it without preventing the production of vegetation."

In the process just described, the land after being levelled was ploughed, so as to make a series of ridges and furrows, the sewage flowed along the furrows and the crops were planted in the ridges. All these works were the outcome of the researches of Dr. Frankland, who had reported that "an acre of suitably constituted soil, well and deeply underdrained, with its surface levelled and divided into four equal plots, each of which in succession would receive the sewage of six hours, would cleanse the sewage of 3,300 persons."

These words were written in 1870, and Mr. Bailey Denton promptly put these theories to the test, and in 1880 he was able to give the world his experience and to show that substantially Dr. Frankland was absolutely correct, for although, as a matter of precaution, he very wisely kept on the safe side by preparing land enough to enable him to allow an acre of land to every 1,100 persons, instead of 3,300, yet he states distinctly "although he had acted thus cautiously in designing the first work of the kind, there was no intention to discredit the conclusions come to by the Rivers Pollution Commissioners as to the cleansing capability of suitably constituted soil," and the evidence submitted in his book fully bears out Dr. Frankland's views. Thus, in 1870, although bacteriology as applied to sewage treatment was an unborn science, and no one had ever heard of the benevolent bacillus, yet sewage was successfully purified on exactly the same lines as those the merits of which are now so loudly proclaimed.

In 1887, the author, following Mr. Bailey Denton, laid out three acres of land on Dr. Frankland's principles for the purification of the sewage of the Rathdown Union Workhouse, at Loughlinstown, Co. Dublin; these plans were approved of by the Chief Engineering Inspector of the Local Government Board for Ireland, Mr. Charles P. Cotton, who is now presiding over this Section. These works were described by the writer at a meeting of the Institution of Civil Engineers of Ireland in April, 1892. The land was divided into plots, levelled and underdrained, as recommended by Dr. Frankland, and the sewage of the workhouse has been filtered through these land filters ever since.

These filters have been in use for the last ten years, so that the writer can now adopt Mr. Bailey Denton's language, and write of his ten years' experience of intermittent downward filtration, and, from a recent visit, he is pleased to be able to state that the filters are still giving satisfaction and producing an effluent which can safely be discharged into the river.

No doubt, modern artificial filters are capable of dealing with a larger volume of sewage than the land filters; but, on the other hand, they will not grow crops, whereas Mr. Bailey Denton aimed at "cleansing the sewage without preventing the production of vegetation."

As regards the relative cost, Mr. Dibdin tells us that the cost of making a burnt clay filter at Sutton, with an area of one-tenth of an acre, was "less than 100*l*." So that the cost of preparing one acre of land for the purpose would in this case have been about 1,000*l*., exclusive of the purchase of the land. But Mr. Santo Crimp informs us in his paper on the Main Drainage of London that the bacterial filter, about one acre in extent, constructed at Barking, cost about 2,000*l*.; the breeze and cinders being acquired on exceptionally favourable terms. Mr. de Courcy Meade tells us that he estimates that the cost of constructing bacterial filters for Manchester would be at the rate of 5,500*l*. per acre, exclusive of the purchase of the land. Mr. Bailey Denton states that the total cost of preparing forty acres of land at Merthyr Tydfil for intermittent downward filtration, including under drains, surface formation, construction of tanks and conduits, distributing chambers, roads, fencing, engineer's fees, and clerk of works, was 3,300*l*., which is equal to 82*l*. 10s. per acre.

Now, according to Dr. Frankland, one acre of suitable land thus prepared would take the sewage of 3,300 persons, and this may be put down at 132,000 gallons a day, whereas, according to Mr. Dibdin, the artificial filter of one acre would deal successfully with 1,000,000 gallons per day, but Mr. de Courcy Meade only allowed 600,000 gallons to the acre. That is to say, following Mr. Dibdin's figures, an artificial filter of one acre is more effective than a land filter in the ratio of 1 to 7·57. If therefore we multiply 82*l*. 10s. by 7·57 we find that the cost of preparing land enough to deal with 1,000,000 gallons a day would be 624*l*. 10s. 6d. against 1,000*l*. for an acre of artificial filter according to Mr. Dibdin's figures for Sutton, or 2,000*l*. according to Mr. Santo Crimp's figures for Barking, or 9,166*l*. according to Mr. de Courcy Meade's estimate for Manchester. These figures are instructive, and throw a side light on the progress of sewage purification since 1870.

But if sewage purification by filtration be not a novelty, the writer ventures to state that successful sewage purification without filtration either through land or artificial filters is absolutely a new departure, and those who have any doubt as to the practicability of these methods are invited to visit the Criminal Lunatic Asylum at Dundrum, Co. Dublin, or the Metropolitan Police Barracks, Chapelizod, Co. Dublin.

BUILDERS' ACCIDENT INSURANCE, LIMITED.

THE seventeenth annual general meeting of this company was held at the offices, 31 and 32, Bedford-street, Strand, W.C., on the 24th ult. Mr. Stanley G. Bird occupied the chair.

The notice calling the meeting having been taken as read, the Secretary, Mr. R. S. Henshaw, read the minutes of the last general meeting, which were confirmed. The report and statement of accounts having been taken as read,

The Chairman said he had great pleasure in moving the adoption of the report. They had just ended a cycle of the life of the company, because on July 1 the Workmen's Compensation Act came into operation, and the business of the company would now be carried on in a totally different way, under different circumstances, and at a very different rate. With regard to the first clause of the report, it stated that "whilst the expenses have been slightly reduced, the premium income has been largely increased." He thought they would agree that that was a very satisfactory report to make—that the business had increased, notwithstanding very adverse circumstances. They had had a very sensible increase in the premium income of the company to the extent of about 1,700*l*. That showed at all events that there was vitality and life in the company, and that the staff, officers, and agents had done their best to make the company a success. The working expenses of the company had been slightly reduced, and that notwithstanding the increase in the amount of the premiums. They considered that the working expenses were a very important item in the company, and it was their opinion that no company could possibly be worked at less cost; and when he told them that the percentage on the income of the company was only about 16 per cent., he thought they would agree that no company could possibly be worked at less than that. He hoped, however, that in the future, with the increase of business and the increase of premiums under the new rate, that the percentage of working expenses would be even less than at present. He believed that the ordinary rate for working expenses in an ordinary life insurance company generally amounted to about 25 or 30 per cent., and, therefore, if they could get anything under that they could congratulate themselves and consider that they were working at the very minimum of cost. During the year they had had a great many more accidents, and the claims had been proportionately large. There were several causes for that. One cause was that the trades-unions in the south had, perhaps, in other respects, been more quiet than had been usual with them for some years, and having little to do they had directed their attention more particularly to worrying the Builders' Accident Insurance instead of devoting themselves to what would probably be more in the interests of their workmen and their own clients. Then with regard to the working of the Compensation Act: no doubt during the last six months or more, owing to the knowledge that this Bill was coming into operation very soon, a great effect had been made on judges, juries, and lawyers. The result had been that since July 1 there had been a great many more claims to settle than if the old Act had remained in force. Possibly all insurance companies had cycles of good or bad luck, and it might simply have been the misfortune of the company that they had had during the past year more accidents than in former years. At all events, the net result of all this had been that they had ended the year 1898, up to May 31, 2,000*l*. worse than they were before. He was quite sure that their opponents would make capital out of that and point out that they had been working at a loss; but it must not be forgotten that for the last three or four years it had been in contemplation that they should increase the rate of 4s., because they had known perfectly well that the 4s. rate had not paid. The only question was whether they should increase the rate from 4s. to 5s., or whether, knowing that they had a reserve of 5,000*l*., they should have recourse to the reserve and take any slight losses they might have from that. As to the reserve, their opponents tried to do as much damage as they could by telling everybody that the company had no reserve, and that it was in a state of bankruptcy. He was not sure that any mutual company or any company working on mutual principles as they were ought to have a large reserve. He could not see the justice of taking money out of their pockets to-day to provide for somebody next year, or two, three, or four years hence. He would remind them of one point with reference to that. In the earlier stage of the company seventeen years ago, the rate was 6s. 6d., and it was very much too high, and at one time they created a reserve of some 8,000*l*. The rate of 6s. 6d. was ultimately reduced to 4s. That reserve had stood them in very good stead for many years, and it was that reserve that they had been entrenching upon this year to make up for the deficiencies. Really the true object of mutuality in a company would be to divide the surplus every year, but that could not be done. Still if they had a surplus say next year or in any future year, after providing a sensible sum for reserve, he would suggest that they should divide the money in the shape of a bonus. He was sorry to have to say it, but it was a fact that some of their opponents had made very unfair attacks upon them. No doubt some of the other companies were a little angry because there was no question but that they launched out at the beginning of this agitation into a new line of business about which they knew nothing; they had no information about it, and they launched out into it and asked a most exorbitant rate; they asked as much as two guineas and three guineas per cent. The Builders' Accident Insurance based their rate at 15s., and it was a very odd thing that the other companies had come down to that rate. There was no doubt that the large capitalised companies which boasted so much of having such an immense sum behind them really meant to victimise the Builders' Company and make them pay this two guineas; and it was only by the stand the company took up that they were able to convince builders generally that 15s. was quite enough.

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They had increased already during July the number of insurers by nearly 50 per cent., and the income of the company for the workmen's risk had now more than quadrupled. The accidents which had been reported from July 1 to July 20 had doubled those of the previous year; but on the other hand the premiums had increased in a greater proportion. Although they had had this increase in the number of accidents he did not think the claims were likely to increase very much, because under the new Act for the first fourteen days no claim could be made; and as many of these were of the very slightest character—many merely cuts and bruises—and so on, he did not think they were likely to hear more of them. They had had three deaths since the Act came into operation, and they had had one total disablement. A poor man fell a distance of only about 8 ft., but he broke his spine, and therefore that would be a case of total disablement. The remuneration of the directors for their services during the past year would be left to the General Meeting. The work had been very much heavier this year than before, and he thought it would tend to become more heavy. There were three returning directors, Mr. John M. Burt, Alderman Brown and Mr. F. J. Dove, and those three gentlemen were all eligible, and offered themselves for re-election. It had been proposed that the number of the representatives on the Board should be increased; that was a most difficult matter for the directors to come to any decision upon. The first name recommended was that of Mr. Thomas Barnsley of Birmingham, and the other names were Mr. A. Krauss, of Bristol; Mr. Wm. Nicholson, of Leeds; Mr. Woodman Hill, of Gosport; and Mr. Geo. Haward Trollope, of London. They should be very glad to increase the number at some later time when they got other names before them. He thought the company had a great future before it. They had not exhausted all the trade yet in trying to get members to join the company. They had been very successful up to the present time, and he was glad to see that they had had a very great deal of success in the North of England through the instrumentality of Mr. Tomlison, the Secretary of the Lancashire and Cheshire Federation, and Mr. Bowden of the Potteries. A great deal depended upon the way that the company treated their insurers. He believed that it was the general opinion throughout the trade that the company had treated well all cases that came before it.

Mr. Mansfield seconded the motion.

In reply to Mr. Sapcote, the Chairman said that each year the stock had been taken at the then value to May 31. Unfortunately on May 31, 1897, it stood at a higher figure than it did at present. Therefore, on May 31, 1898, they really effected a loss. They had taken it at the market value of the day, and that really accounted for it.

Mr. Alderman Bowen, Mr. W. H. Lascelles, Mr. Goslett, and other members having joined in the discussion, the Chairman then put to the meeting the motion "That the report and balance-sheet be received and adopted," and it was carried unanimously.

The retiring directors having been re-elected, Mr. Barnsley, of Birmingham; Mr. Woodman Hill, of Gosport; Mr. A. Krauss, of Bristol; Mr. W. Nicholson, of Leeds; Mr. G. Haward Trollope, of London, were elected directors of the company.

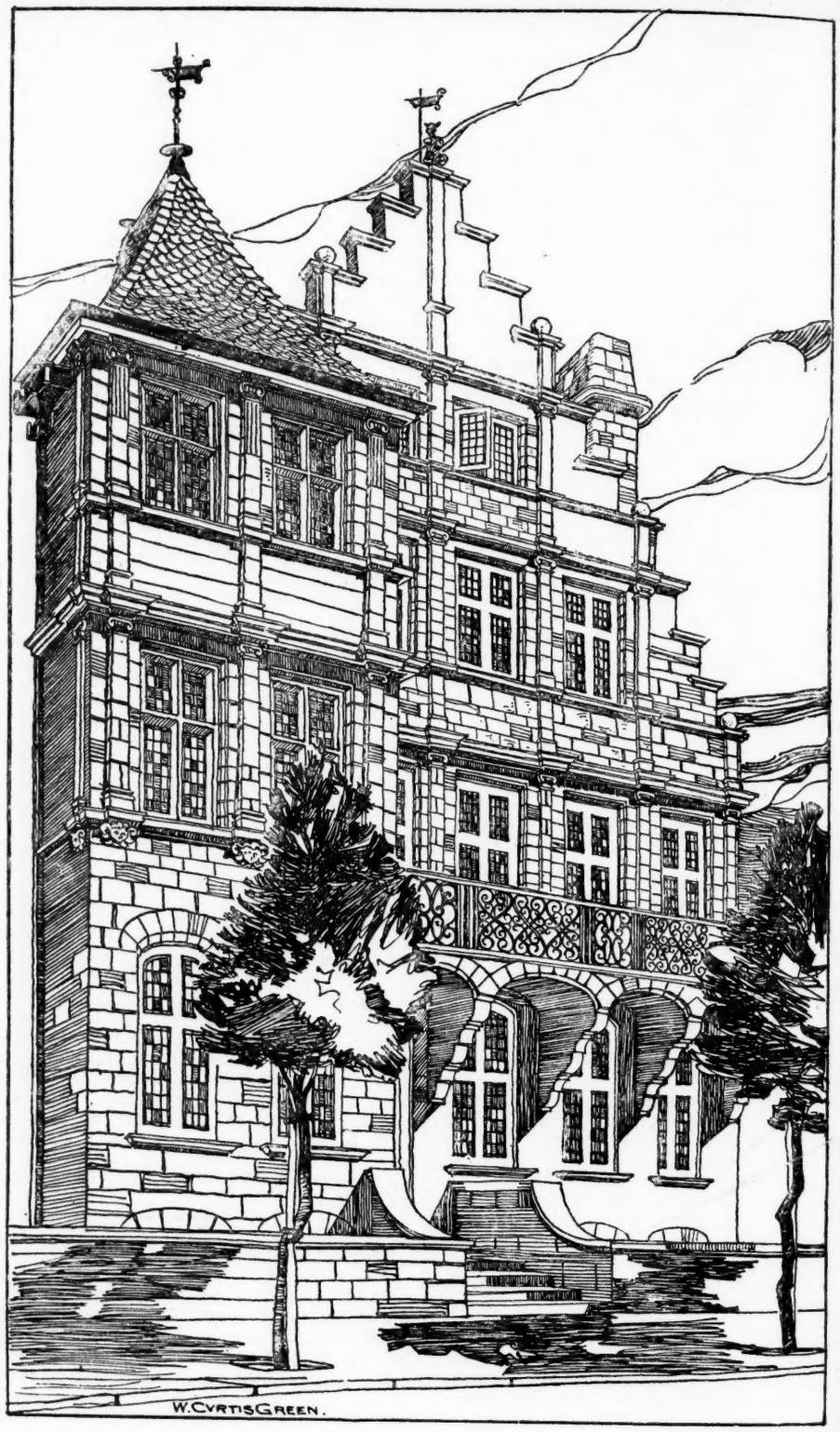
On the motion of the Chairman, it was resolved that in future the accounts be made up to December 31 in each year.

It was resolved that the remuneration of the directors for the past year be the same as previously paid them, namely, 400*l.*

It was proposed by Mr. John Greenwood (London), seconded by Mr. Hanson, and resolved, that a cordial vote of thanks be tendered to the Chairman for his services during the past year.

The Chairman having replied, the meeting terminated.

CHURCH SCHOOLS, AMBLE, NORTHUMBERLAND.—The memorial stone of the first section of the Amble Church of England (Medd Memorial) Schools was laid on the 24th ult. The site of the new structure is in Dovecot-street. The entire block will accommodate 800 scholars, and the section commenced will seat about 320. It will be used as a mixed school, and the existing building as an infant school. The class-room system has been adopted. The contract for the work has been let to Messrs. R. Carse & Sons, the architect being Mr. J. Wightman Douglas, of Alnwick.



Sketches of London Street Architecture. No. XXVIII. 13, Bramham Gardens, S.W.

HOUSE, No. 13, BRAMHAM GARDENS, S.W.

THIS house, the sketch of which forms No. XXVIII. in our series of sketches of London Street architecture, has a front of brick and terra-cotta in the modern "Free Classic" style, with a bold treatment of the large corbels carrying the balcony.

The present owners of the house can give us no information as to the name of the architect, which we are unable to add.

BOARD SCHOOL, WESTBURY PARK, BRISTOL.—The new Board School at Westbury Park was opened on the 22nd ult. The buildings of the school are the first instalment of what will probably be a large school, and are therefore arranged with a view to extension. They comprise a central hall, two class-rooms, each for fifty children, and a babies' room for fifty. An octagonal teachers' room has a lavatory adjoining, and there are a large cloak-room and lavatory for the children, and a room for the use of the caretaker. The whole building is heated by hot water, but the hall and class-rooms have also fireplaces of glazed faience; the exterior is treated in red brick. The architects are Messrs. La Trobe & Weston.

THE TRADES-UNION CONGRESS.

THE thirty-first annual Trades-union Congress opened at Bristol on Monday, when about 420 delegates, representing 1,200,000 members, were present. Mr. Wilkie, of Newcastle, Chairman of the Parliamentary Committee, presided.

Mr. Wilkie, in welcoming the delegates, spoke of the advance which trades-unionism had made in the last twenty years. Trades-unionism was bound to extend and prosper, and every struggle it had to make tended to strengthen its hold on the nation.

The Mayor of Bristol also welcomed the delegates.

Mr. J. O'Grady, of Bristol, having been elected President of the Congress.

Mr. Woods, M.P., Secretary, read the report of the Parliamentary Committee, and later in the day the delegates paid a visit to Weston-super-Mare.

From the report of the Parliamentary Committee we make the following extracts:—

"In presenting our thirty-first annual report we have to state that many matters of great importance have occurred during the year which are significant and of deep interest to

the industrial classes of the country; and while we cannot boast of the successful passing of any prominent legislative measure directly promoted by the Congress, yet we have had interpretations of the law given in the courts of justice which are of especial import to trades-unions, and there are other questions still pending affecting the labour laws, waiting final decision, which cannot be settled until the early part of next year. . . . Early in October, immediately after the last Congress, the Parliamentary Committee, as is their usual custom, met and went through the resolutions passed at Birmingham, specially dealing with those which contained instructions directing them to promote and support legislation, with the following results:—'The Employers' Liability Amendment Bill' was entrusted to Mr. Burt, 'The General Eight Hours Bill' to Mr. Burns, 'The Factory and Workshops Amendment Bill' to Mr. Dalziel, 'The Truck Act Amendment Bill' to Mr. Broadhurst, 'The Foreign Ships and Compensation Bill' to Mr. Reckitt, 'The Railway Fatalities Bill' to Mr. Channing, 'The Bakers' Eight Hours Bill' to Mr. Woods, 'The Steam Engine and Boilers (Persons in Charge) Bill' to Mr. Samuel, 'The Boilers Registration Bill' to Mr. Fenwick, 'The Watermen's Certificate Bill' to Mr. Steadman, 'The Watermen's and Lightermen's Act Amendment' and 'The Workmen's Cheap Trains Bill' to Mr. Woods. Your secretary also has his name on the back of two other important Bills, first, 'The Workmen's Compensation Amendment Bill' (having for its object the extension of the provisions of the Compensation Act, 1897, to the injuries to health and loss of life suffered by persons employed in certain dangerous occupations), and the other 'An Amendment to the Truck Acts' (having for its object the preventing of any contract with any workman whereby he is compelled to cease being a member of any club or other friendly society). . . . . Your committee, in their report to the Birmingham Congress, referred to certain cases pending under the Law of Conspiracy Act, 1875 (Picketing Clauses). Since that time decisions have been given in the law courts, and by the House of Lords, on two of the most important of these cases, viz., Allen *v.* Flood and Lyons *v.* Wilkins. The first of these cases came before the law lords in the House of Lords on December 14, 1897, and after a very elaborate and long discussion they decided, by a majority of seven to three, that the principle for which the workmen contended was upheld, viz., the right of workmen to decide with whom they should work. This decision is all the more remarkable, because it upset a previous decision in the Court of Appeal in December, 1895, wherein six judges against two gave a contrary opinion. It is impossible to overestimate the value of this latter decision to trades-unions, and it marks an important turning point in a great industrial controversy, especially as in the latter years attacks on trades-unions have been pressed forward with such dangerous energy by the uninstructed henchmen of capital who are always to be found in the legal profession. It is unnecessary to go further into details of this case, as your committee has issued, in pamphlet form, all the legal arguments set forth in the discussion, and such pamphlet has been sent out to the trades. The next case, Lyon *v.* Wilkins, stands rather in a different position. This case has been pending now for over two years, during which time it has been heard in both the lower and the higher Courts. It will be remembered that there was a strike in which the Fancy Leather Workers' Society found themselves in conflict with a firm of leather bag makers in Redcross-street, London. Certain of the officers of the union were said to have been, by themselves or their agents, watching or besetting the plaintiffs' works for the purpose of persuading persons from working for them. The plaintiffs claimed an injunction to restrain the Society from doing this, which, broadly speaking, was directed against the right of picketing, which has been practised without molestation for many years, and also to restrain the Society from writing and publishing certain letters, which were claimed to be libellous, as to the plaintiffs' mode of conducting their business. In respect to these letters Mr. Justice Byrne held that they were libellous, and awarded 5*l.* damages in respect thereof; upon the remaining points of watching and besetting, which is of considerable importance to trades-unions generally, Justice Byrne has decided that the law of picketing, as it has been practised for many years, is undoubtedly illegal, and, further, is a criminal act. The fancy leather workers have given notice of appeal in consequence of this unsatisfactory decision. In respect to the present and future position of this case, your committee, after full consideration, although they could take no financial responsibility, agreed to render what help they could by recommending their case to the trades-unions composing the Congress. . . . . On July 1 the Workmen's Compensation Act came into operation, and although many cases have arisen in the different branches of industry in regard to the subject, it is too early to express a definite opinion as to the practical applicability of the measure. Your committee, through their secretary, have placed themselves in communication with Mr. Edmund Browne, barrister-at-law and member of the L.C.C., with a view of drafting a Bill dealing with the defects of the Workmen's Compensation Act, many of which were pointed out in the committee's last report to the Birmingham Congress. It is unnecessary to state that Mr. Browne at once kindly consented to draw up such a Bill, and he has placed the proposed Bill in the hands of your committee, who during last week fully considered its proposals, and a statement will be laid before this Congress on the subject. Trades are requested to forward to the Parliamentary Committee full particulars of all cases decided under this Act.

On Tuesday the second session was held in the Colston Hall, when the chair was taken by Mr. James O'Grady, the newly-elected President, who delivered his Presidential address. Commenting on the national character of their work from a political and Parliamentary point of view, the past twelve months, he said, had been barren, and he could not help thinking that something must be done to free their industrial conditions from the blinding shame and disgrace that was attached to the half-time system and child labour generally. That question had reached the importance of being one of national concern, as to which there was need of immediate and drastic reform. July 1 witnessed the coming into operation of one of the most revolutionary of the laws relating to labour that the century had yet given birth to. While fully recognising the meagreness of the Workmen's Compensation Act, he, as a workman, accepted it because it contained the germ for a more complete measure in the future. It had met with a storm of disapproval from both employers and employed. The former prophesied all sorts of evil effects to industry from the operations of the Act, but he did not sympathise with those predictions. If the Act only succeeded in lessening to a small degree the number of workmen injured and killed, then it had justified its existence on the Statute-book. The objections of the workers were—first, that the Act was not comprehensive enough; that it should embrace, not a dozen or more, but all trades. That being so, it only required agitation to get the principle of the Act extended. Secondly, it was said it would damage the existence and prosperity of the great friendly societies. He believed it would, and that seriously, but that should not alarm them. While testifying to the good work they had done, he could not conceal from himself the fact that they were usurping the functions of the State. If it was logical for the State to interfere to reduce the hours of labour, and to insist that special regard should be paid to the safety of life and limb, on the ground that the national prosperity depended on the well-being of the worker, the necessary corollary was that the State should care for him in times of sickness, in order that his productive powers might again be at the disposal of the nation. Thirdly, it was contended that preference of employment would be given to young men, with whom the risks of accidents were less than with the more aged. He should be glad if the effect of the Act were so, for who ought to work but the young and strong, and who were entitled to rest if not the old and weak? If these results were to come from the operation of the Act, then the ideal of pensions for old age would be advanced a considerable step nearer realisation. The fourth objection, and, from the trades-union point of view, the strongest, was that the Act allowed contracting out. He believed, however, that just as the principle of common employment was found to be bad, so the principle of contracting out would be found to be immoral, because it tended to render direct legislation largely inoperative, thus defeating the ends of justice. Taking the Act as a whole, however, and seeing that it had in it the promise of being the most useful and beneficial of the laws relating to labour; that it had asserted the right of the State to interfere in industrial matters where the conditions of safety were loose; and, above all, that it had practically abolished the principle of common employment—taking these points into consideration, he thought they had something to rejoice over, and ought to be prepared to give the Act a fair and impartial trial.

The recent engineers' dispute had demonstrated the absolute futility of attempting to gain any considerable reduction in hours of labour by trades-union action alone. Again, it had taught them that the time for isolated fighting had departed. In the future no individual union could hope to achieve success against the combinations of capital. If trades-unionism was to continue to be the power that it had been in the past, it would not be by the old methods of defence or attack, but by perfecting their organisations, and welding them into a solid unity, giving them a national spirit and aim, so that under present conditions there might be a conscious working towards achieving immediate results. Therefore, he sincerely hoped the Congress would not break up until it had adopted the basis of some scheme of trade federation. Then, with co-operation and trades-unionism running together, the two mighty weapons of Democracy might be intelligently used to work out their industrial and political emancipation. What he wished them to recognise was the trend of modern industry. Its drift, although unconscious so far as its own world of capital was concerned, was distinctly towards collectivism, and if trades-unionism was to hold its own as a fighting force against the unconscious tendency of capital, it must do consciously what capital was doing unconsciously. In other words, to make the issue clear and distinct; to give order, method, and a national aim and spirit to their movement; to make every step forward secure; to prevent striking in the dark, lest, after months of fighting, they found a false move had been made. Above all, if they desired to make trades-unionism that intellectual force in industrial politics and social matters to which its importance entitled it, they must declare that it had an objective. Having agreed, then, that that was collectivism, they must use every agency at hand, industrial and political, to work consciously towards that goal. After the legal eight hours day and the extension of the Workmen's Compensation Act to all trades had been achieved, the most important item was the question of land reform. He advocated the taxation of land values, the nationalisation of mining royalties, mineral rents, and way leaves, and the nationalisation of railways. These were matters of supreme importance, not only to the workers, but to all classes of the community. Their political programme also must include payment of members and election expenses, a second ballot, universal suffrage, one man one vote, and a three months' qualification. The only question that remained to be dealt with was, is it possible for trades-unionists to agree (given agreement on the programme) as to the methods of procedure. That had in the main been the rock on which the political barque of trade unionism had repeatedly been wrecked. His own opinion was that a scheme for political action for translating their ideas respecting industry into the Statute-books of the nation was possible and practical, but it was only possible or practical by keeping themselves separate and having an identity quite distinct from existing political associations. He did not wish it to be understood that such a position would of necessity force them into opposition to all sections of political thought. On the contrary, he fully believed that the trades-union movement, with its powerful organisation, well drilled and disciplined, would be the comprehensive channel through which the progressive thought of all sections of the community could be best expressed. Now, assuming that the Congress were determined to adopt some scheme, or basis of a scheme, of Trades Federation, he sincerely hoped that another committee would be appointed to draft a scheme of political organisation, so that this might become a burning question at future Congresses, on the ground that just as Trades Federation was a matter of vital necessity to our industrial organisations, so also would a scheme of political action be of vital necessity if they wished Parliament to faithfully register the effect of

the industrial revolution on our social life. He suggested, then, that such a committee should consider a scheme which appeared in the *Westminster Review* in December, 1897, under the heading of "Hardy Annuals at Trades Union Congress." The writer calculated that a subscription of one penny per week from Trades Unionists would amount in round figures to 224,000*l.* in one year, and in four years, when the life of the present Parliament would be nearing its close, the fund would amount to 896,000*l.* With that sum they could, if need be, threaten every seat in the Kingdom.

Mr. G. Hodge (Manchester) moved a vote of thanks to the President for his address. This was seconded by Mr. Sexton (Liverpool) and agreed to.

The Congress then proceeded to consider the Report of the Parliamentary Committee.

Mr. Steadman moved—"That this Congress deplores the omission in the Parliamentary Committee's Report of any reference to the numerous deaths arising from phossy-jaw and lead poisoning, and strongly urges upon the Home Secretary the necessity of introducing legislation at the earliest opportunity in order to deal with this question."

The President: That is out of order. It is a distinct amendment. If you will leave the matter to Mr. Wilkie and the secretary, they will insert a clause embodying your views.

The report, after a vote by card had been challenged by Mr. Sexton (Liverpool), was then carried by 744,000 against 220,000.

Mr. Gray, representing the Co-operative Union, Limited, then addressed the Congress, dwelling on the importance of the relations between Trades Unionism and Co-operation.

The delegates subsequently proceeded to the consideration of the resolutions submitted by the Parliamentary Committee.

Mr. Bowerman (London) moved, Mr. Parnell (London) seconded, and it was unanimously agreed to instruct the Parliamentary Committee to take immediate steps to secure an alteration of the Conspiracy Acts, and to introduce a Bill having for its object the reform of the jury system, co-operation, and trades unionism.

Mr. Inskip (Leicester) moved, and Mr. Gibbs (London) seconded, a resolution in favour of closer relations between co-operators and trade unionists.

Mr. Macpherson (London) said a great deal of improvement was to be desired in regard to some co-operative societies, both as to the conditions of employment and the rates of remuneration. The resolution was adopted.

Mr. D. Holmes (Burnley) moved, and Mr. Sexton (Liverpool) seconded, a resolution dealing with the taxation of ground values. After some discussion, the following amendment, moved by Mr. Sharland (Bristol), was accepted and carried as a substantive motion:—"That the present incidence of taxation and rating is unjust, inasmuch as it exempts from national and local burdens the ground values which are created by the presence, the industry, and the expenditure of the whole community, and that the Parliamentary Committee be instructed to prepare a Bill providing for the separate valuation of land and improvements, and for the assessment of taxation and rates upon the full true yearly value of the land, whether used or not."

An amendment, moved by Mr. Will Thorne (London), proposed that the money realised by the taxation should be ear-marked for purposes of technical education, free libraries, baths and washhouses, and the erection of artisans' dwellings, was defeated.

On the motion of Mr. Mullin (Manchester), seconded by Mr. Cross (Blackburn), a resolution calling for further amendment of the Factory Act was carried.

Mr. Wilkie (Newcastle) moved a resolution recognising the importance of the new Workmen's Compensation Act, regretting its limited application, and expressing the opinion that no Act would be satisfactory which did not provide for compensation for all workers, both on land and sea.

The Parliamentary Committee were instructed to introduce a Bill next Session providing for the abolition of contracting out and the principle of common employment.

Resolutions were passed in favour of the more thorough carrying out of the "Fair Wages Resolution" of the House of Commons, and the payment of members.

Mr. W. Thorne (London) moved, and Mr. Mitchell (Glasgow) seconded a resolution in favour of a legal general eight hours' working day; the discussion was adjourned until Wednesday, when the debate on Mr. Thorne's motion in favour of a legal eight-hour day was resumed by Mr. Paul Vogel, the secretary of the Waiters' Union, and the motion was carried with only a few dissentients.

The congress subsequently considered the resolutions sent up from the trades. The first five resolutions all dealt with fair wages, but they were amalgamated into one, which was moved by Mr. Mosses, of the Pattern Makers, and seconded by Mr. Fox, of the Boiler Makers. The resolution was adopted.

The consideration of the question of Trades Federation was deferred until Thursday.

Colston Hall, where the sittings of the Congress have been taking place, has been the scene of a destructive fire. The special correspondent of the Press Association says that shortly after two o'clock on Thursday morning it was discovered that the premises of Messrs. R. Clark & Co., clothiers, Colston-street, were on fire, and before the brigade could be summoned the flames in great volumes were pouring through the top and through the roof. Next the roof of the Colston Hall began to burn. At half-past three some 20 yards of the roof immediately above the organ were burning fiercely, and plaster, charred wood, and streams of water were falling upon the grand organ, which is to all intents and purposes destroyed. In spite of the efforts of the police, the whole of the large hall was involved. The roof has fallen in, and nothing remains of the Hall in which the Congress met but bare walls. Colston Hall was built in 1870 on the site of the Carmelite Friary, afterwards known as the Great House and then as Colston's School. It contained, besides the large hall, 80 ft. wide and 70 ft. high, capable of accommodating 2,250 persons in the body and galleries, and 400 additional in the balconies or orchestra, two other halls, one with sitting accommodation for 700, and the other on the ground floor for 400. Colston Hall was designed by Mr. Foster.

Illustrations.

THE GUILDHALL, CAMBRIDGE.

THE proposed new buildings for the Cambridge Guildhall have not yet been commenced; but it is hoped the building may be started as soon as possession is obtained of the property necessary to furnish the complete site.

The hall, courts, and free library are completed, and the proposed additions will form suitable approaches, and the accommodation for the municipal offices which is now lacking.

The new buildings, as arranged, are on the frontages laid down by the Borough Surveyor, and will occupy one side of the fine Market-place.

The remarkable examples of the Later Renaissance architecture already possessed by the University city have led to the adoption of this period for the new Guildhall, and it affords opportunities for marking the importance of the municipality in its relation to the University.

The cost of the work is estimated at 38,000*l.*, a comparatively small sum for a work of this extent and importance.

Mr. J. Belcher is the architect. The drawing was exhibited at the Royal Academy of this year.

"TARN MOOR," HINDHEAD, NEAR HASLEMERE.

THIS house has lately been erected near the top of Hindhead, on wild and heathery land, which slopes towards the south. The façade shown here is the northern or entrance front. The southern or garden front commands fine views of the blue hills which are so deceptive in these parts of Surrey and Hampshire that they look like distant mountain ranges. It will be seen from the accompanying ground plan that a covered way has been provided on the south side, and the floor has been laid with oak strips in order that it may be pleasant to walk there on fine winter days (as the exposed situation renders the neighbourhood cold). The fireplaces have not been placed against the external walls, but they have mostly been placed back to back inside, so that their flues, passing through the building, may help to warm it. The hall and the chief sitting-rooms and bedrooms, besides having fireplaces, are warmed by a system of hot-water pipes.

The contractors were Messrs. Martin Wells & Co., of Aldershot, who not only supplied but also manufactured the red bricks with which all the walls are faced. The roofs have been covered with "Excelsior" Broseley tiles.

The architect is Mr. Arnold S. Tayler, London. The drawing was exhibited at the Royal Academy of this year.

HOUSE AT HARPENDEN.

THE house was designed to suit the site. The ground having a considerable slope, the floors of the drawing-room and bedrooms over were made higher than the rest of the house. By doing this the main body of the house was kept low.

The materials are mostly of local manufacture, and the whole of the work was carried out by Messrs. Phillips & Blake, builders, of Harpenden, from the design and under the superintendence of Mr. E. J. Dodgshun, of the firm of Oliver & Dodgshun, Carlisle and Leeds.

HOTEL, ISLE OF WIGHT.

THE small hotel here illustrated is to be erected on a beautiful site in the Isle of Wight, commanding views both of the Channel and inland.

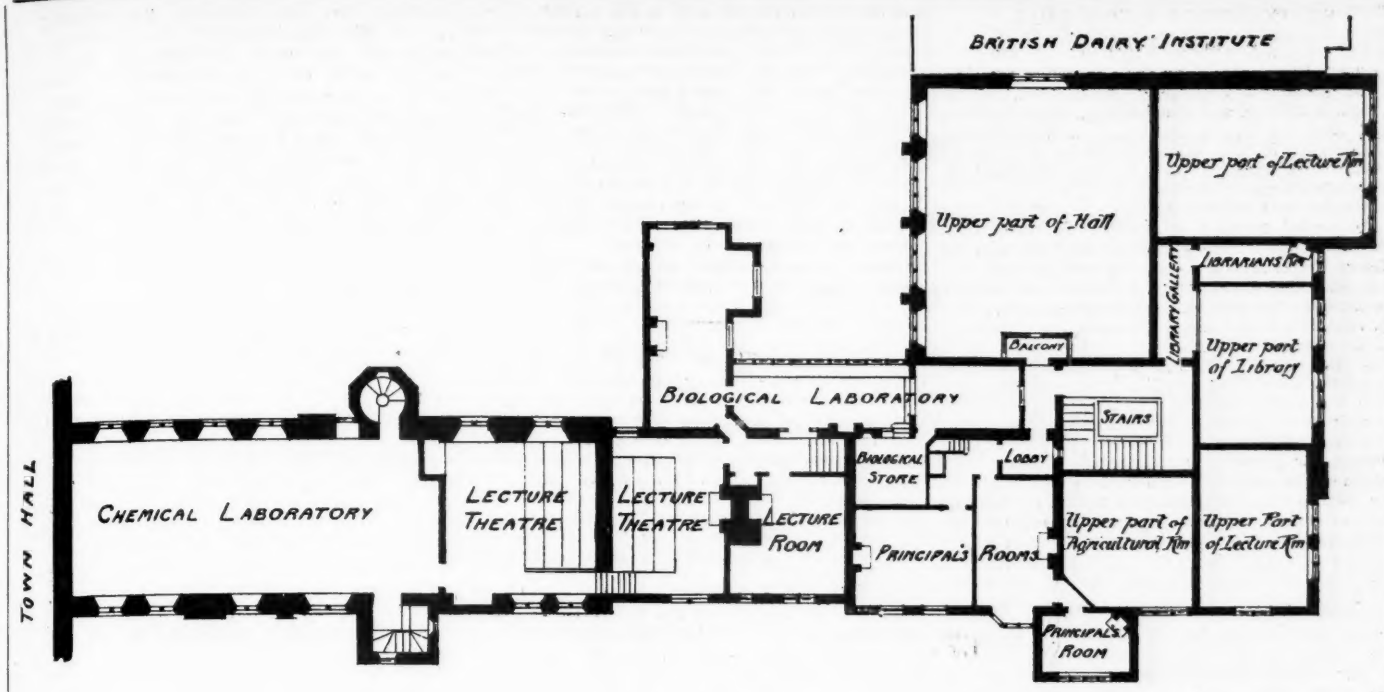
The walls of the building will be largely composed of stone quarried on the estate and finished with a "rough-cast" stucco face. The roofs are to be of Horsham stone slates and most of the external woodwork is to be finished white. The internal decorations will be specially designed by the architect, Mr. F. Steward Taylor.

The drawing was exhibited at the Royal Academy exhibition of this year.

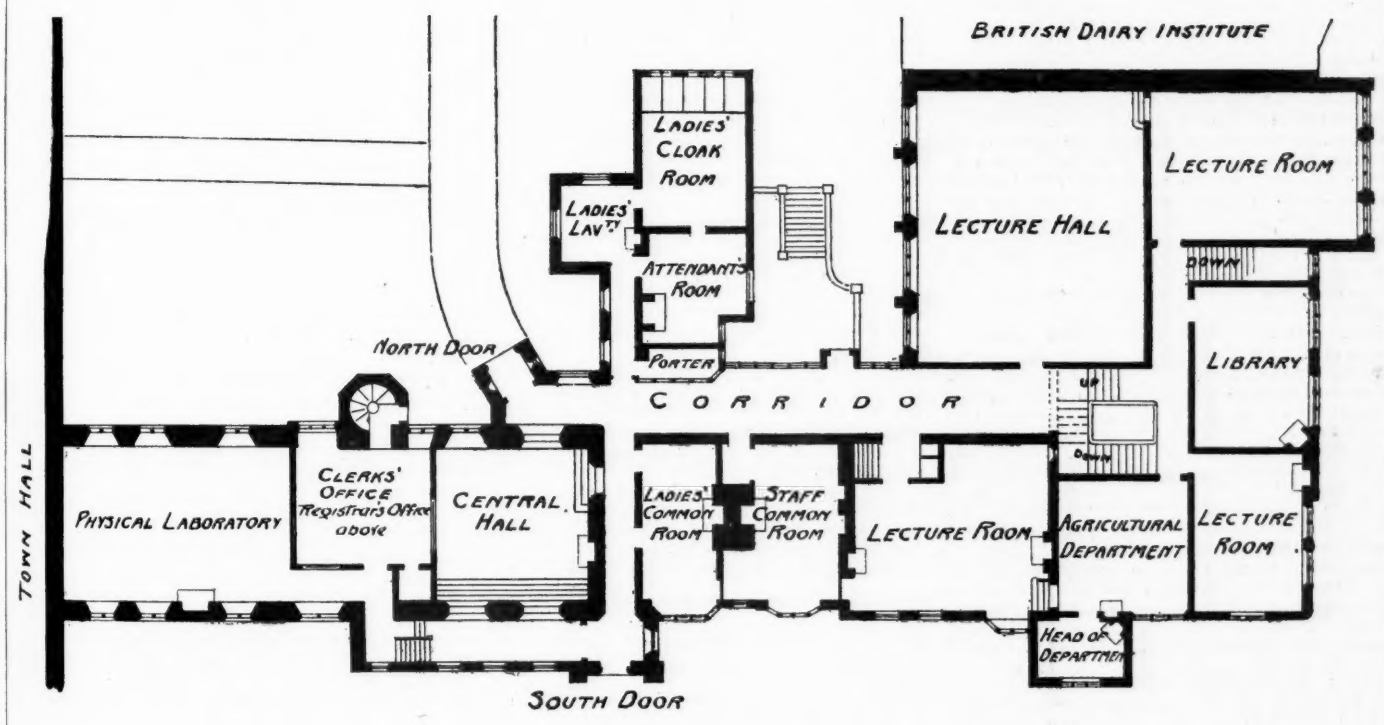
ADDITIONS TO READING COLLEGE.

AT the time of the establishment of the University Extension College at Reading in 1892, the Corporation of Reading had become possessed of a portion of old Reading Abbey, a building known as the Hospitium, of the date of Henry VI., which was in a ruinous condition, but which the Corporation restored at considerable cost under the direction of Mr. S. Slingsby Stallwood, who at the time was a member of the Corporation and acted as honorary architect. The building in its restored condition was placed by the Corporation at the disposal of the newly-formed college. Subsequently the adjoining vicarage of St. Lawrence was purchased, and after undergoing very considerable alteration and addition was added to the college buildings. It was not long before the want of still further accommodation was felt, and the erection of the block of buildings which we illustrate this week was determined upon. These buildings were opened by the Prince of Wales on June 11 last. They consist on the ground floor of a college hall, 45 ft. by 35 ft. by 19 ft. high, lighted on one side by stone windows, with lead-light glazing; a college library, with large gallery and librarian's room attached; agricultural department, with general office, professor's room and lecture room attached; besides two other large lecture rooms, all 16 ft. 6 in. high. On the floor beneath are two large lecture rooms and three workrooms, besides lavatory and other sanitary arrangements. To this floor there is a separate entrance off the Forbury-road, at a level half-way between the two floors, with double staircase leading up or down to the respective floors. The top floor of the new building is devoted entirely to the new art department, and is reached from the other floors by a stone staircase. This department consists of a large studio, 45 ft. by 35 ft., with open timber roof, and a special feature of this room is the eight-light stone window at the north end, rising some 22 ft. high, whence all the light to this studio is obtained; a painting room 40 ft. by 20 ft., life room 34 ft. by 24 ft., modelling room, and wood-carving room, separated by movable partition; art director's room, and storage. All the rooms of the art floor have open timber roofs, and in all cases there is lighting from the north, and the rooms are ventilated by special means.

The whole of the buildings are lighted by electricity and heated by hot water on the low-pressure system. The floors are all fireproof,



FIRST FLOOR AND MEZZANINE



GROUND FLOOR

Additions to Reading College. Plans.

constructed of steel girders and joists, with hollow tile lintels and concrete filling, and in some cases have a clear span of 35 ft. between supports. The surface of these floors is covered with pitch-pine blocks. The principal rooms have panelled dados, 6 ft. 6 in. high. The walls are plastered with the Adamant Company's patent plaster, which gives them a very hard clean surface.

The general contractors were Messrs. Henry Higgs & Sons, of Reading, Mr. Alfred Holt acting as general foreman; the steel girders and fireproof flooring are by Messrs. Mark Fawcett & Co., London; wood-block flooring by Messrs. Geary & Walker, London; artificial stone staircases by Messrs. Wilkinson & Co., London; sanitary appliances by Messrs. Bolding & Sons, London; heating apparatus by Messrs. Rosser & Russell, London; electric lighting by Messrs. T. C. Williams & Son, Reading; steel casements, Mr. J. E. Lucas, Brockley; and roof glazing in the art rooms by Messrs. Helliwell & Co., London. The whole has been carried out from the designs and under the personal direction and supervision of Mr. S. Slingsby Stallwood, architect, of Reading.

SKETCHES IN NORMANDY.

THESE small sketches were made during a short holiday in Normandy. They represent subjects which may no doubt have been sketched and described many times, situated as they are in a country so full of interest to the artist and student, rich examples of architecture and picturesque bits abounding in every direction.

One of the most beautiful towers is that of St. Laurent, in the Rue Thiers, Rouen, built at the end of the fourteenth century; the upper part is exceedingly rich in appearance, crowned with flying buttresses and pinnacles. The church itself, or rather the remains of it, is, I understand, now used as a workshop. The small balcony at the side has a very quaint appearance.

Caudebec is a very old and interesting town, its picturesque streets and timbered houses supplying the artist with ample material. The principle feature is, of course, the church, a beautiful specimen of the fifteenth century, exhibiting the Flamboyant style in all its perfection. The tower is divided into three stages, with rich buttresses and windows, and is surmounted by an open-worked stone spire (the subject of one of these sketches) of the most delicate workmanship.

Havre has little to offer of special interest to the architect; the general bustle, especially in the markets and at the docks, makes, however, a pleasant diversity. It is said that the tower of the Parochial Church of Nôtre Dame was at one time a lighthouse.

G. W. COLLINS.

CHAPEL, MANCHESTER. — A conventual chapel, also for the use of an orphanage, the memorial stone of which was laid by the Bishop of Salford last month, is approaching completion in the enclosure of the Sisters of Charity of St. Vincent de Paul, in Victoria Park, Manchester. It is in length 90 ft., by 30 ft. wide, in one span. An ambulatory surrounds the sanctuary to give relief to the altar. The work is in brick and Ruabon terra-cotta. It is fourteenth century (French) in style and has traceried windows. The east end is apsidal in form. The roof, pitch pine, is hammer-beam with pierced panels. Messrs. Wilson & Toft, of Manchester, are the contractors, and Mr. W. H. Rawle, of Manchester, is the architect.

ST. COLMAN'S CATHEDRAL, QUEENSTOWN.

ABOUT thirty years ago the foundation was laid of St. Colman's Cathedral, Queenstown, in the diocese of Cloyne, and the building, which has long been used for Divine worship, is now practically completed. It was contemplated at the time to build a comparatively plain structure, without any appreciable amount of ornament either internally or externally, and with that view several architects were invited to send in designs in competition. Several designs were submitted, and the one by Messrs. Pugin & Ashlin—then in partnership—was selected. The old church was taken down, and the trenches for the foundations excavated, and on July 15, 1868, the first stone of the masonry of the foundation was laid. The corner, or ceremonial, stone was laid on September 30 in the same year. The foundations were then rapidly proceeded with, and soon the works were in a condition to enable the committee to advertise for tenders for the superstructure. The tender of Messrs. Meade & Son, Dublin, for 33,000*l.*, was accepted. The extreme length of the cathedral from east to west is 210 ft., the breadth across the transepts 120 ft., the breadth across the nave and aisles 84 ft., the breadth across the chancel and four side chapels (three of which are completed) 116 ft. The height to the ridges of the roofs of the nave, chancel, and transepts, 100 ft. The height to the top of the cross on the tower and spire, when completed, will be 300 ft. There are four octagonal turrets at the angles of the transepts, each about 120 ft. high, and two similar turrets terminating the nave walls on the west front, each containing winding stair approaches to the organ-gallery, music-room, tower, and roof, each 130 ft. high. These dimensions are considerably in excess of those of the original plans upon which the contract was made, as both plans and details were extended and elaborated as the works progressed. The material used in the external facing of the walls is blue Dalkey granite, and the cut-stone dressings are of Mallow limestone, except the cornice and gutter courses, which are of Fermoy limestone. All the stone for the rubble work was obtained from the local old red sandstone quarries of Spy Hill and Castle Oliver. The whole of the interior faces of the walls are lined with Bath stone, and the columns of the nave and chancel arcades, and the arcades of the shrines and confessionals are composed of marbles from the quarries of Fermoy, Midleton, and Connemara. The slates used on the roofs are Belgian green, and all the hips, ridges, ventilators, and doors of passages through the roofs are covered with lead. All the gutters are constructed of limestone, and inclined gutters of stone are provided where the roofs of the side chapels terminate against the walls and gables, there being no lead used for either gutters or flashings throughout the building. The ridges of the roofs of the nave, chancel, and transepts are surmounted by wrought-iron crestings, galvanised, manufactured by Messrs. Webb, of Belfast. When the contractors had carried up the external walls of the cathedral to an average height of about 12 ft. it was thought that a cathedral ought to have greater embellishments than an ordinary parish church. About this time, owing to the extensive business commanded by Messrs. Pugin & Ashlin, and the fact that Mr. Pugin resided in England and Mr. Ashlin resided in Ireland, it was thought that it would be more advantageous to both to divide the business, each to practise in the respective country in which he resided. This course having been adopted, the work in connexion with St. Colman's Cathedral fell to Mr. Ashlin, and the Bishop and committee ultimately determined upon making the cathedral more elaborate and imposing. It is stated that from this time the whole character of the works was changed—new drawings had to be prepared, and, in fact, with the exception of the ground plan, none of the original drawings were adhered to. The contract with the Messrs. Meade, who built about a third of the structure, was then terminated by mutual agreement, and from that stage the Bishop and committee took over the works and carried them on under the supervision of the architect, with Mr. Doran as clerk of works, until the cathedral was opened for Divine worship. Since then there have been erected the statues, in white marble, of "Our Lady Star of the Sea," on the south transept gable, the statue of St. Joseph in a corresponding position on the gable of the north transept, and the statue of St. Colman on the gable of the west front. A gilded statue of our Lord is erected on a pedestal at the intersection roof of the apse, as well as life-size figures of the twelve Apostles, St. Patrick, St. Celestine, and St. Barnabas. These figures are of Portland stone, and are fixed on pedestals surmounting the parapet around the apse and transepts. In niches lower down in the building are life-size figures of St. Nicholas, St. Blazius, St. Francis, St. Brigid, and St. Helen. There are still many pedestals and niches awaiting figures, which, it is hoped, will be enriched by the reception of them at an early date. Above the large windows that light the transepts in the gables there are inserted two groups of life-size figures—that in the north transept being the Holy Family, and that in the south transept the Coronation of the Blessed Virgin. The first-named is of Mallow limestone, and the second named is of white marble. For a long period the only portion of the interior of the cathedral in which an effort was made to approach completion was the chancel, apse, and side chapels. In these, mosaic floors were laid down, the ceilings were groined with wood, the walls were diapered, and the capitals, bosses, and cornices sculptured. In the chancel a high altar was erected, and in the side chapels three altars were erected also—one in the Lady chapel, one in the chapel of the Sacred Heart, and one in the mortuary chapel. The whole of the altars are of white marble, furnished with columns of coloured marbles and figures in statuary marble; panels and background being enriched with designs and monograms in gold mosaic. The high altar, and altar in the Lady chapel, are from the studio of Messrs. Early, of Dublin, and the altar of the Sacred Heart and mortuary altar are from that of Mr. John A. O'Connell, of Cork. The communion rail, 106 ft. in length, in an unbroken line, is an open arcade, the table arcade and base of which are of white marble, and the supporting columns of Cork red and Galway green marbles. It is provided with a central gate from the nave, and two smaller gates—one opposite each aisle. This rail was executed by Mr. Patrick Scannell, of Cork; and the gates were made by Messrs. O'Gloughlin, of Dublin. The confessionals are formed like little chapels in the thickness of the aisle walls. An effort was made to fill in some of the windows with painted glass, and the window in the east end of the Sacred Heart chapel was the first which was undertaken. The great window of the south transept was next filled in—the subjects having reference to scenes in the life of the Blessed Virgin. The glass was prepared by Hardman, of Birmingham. The window in the east end of the mortuary chapel was filled in with painted glass from the firm of Early, Dublin, and the subjects represent the visit of our Lord to Martha and Mary and the raising of Lazarus from the dead. A window was erected in the north aisle to commemorate the long connexion of the Rev. Daniel Keller with the parish. This window is by Messrs. Cox & Buckley. The throne and stalls in the chancel are of oak, as is the sedilia. They are from the workshops of Messrs. Beakey, Dublin. Messrs. Creedon & Son, Fermoy, were the contractors for the wood-groined ceilings of the nave and transepts; Mr. John A. O'Connell, of Cork, for the sculpture of the capitals, panels, bosses, corbels, diaper and figure work, and the cleaning of all the stone work of the interior; Mr. Smith, of Dublin, for the sculptured groups of the Stations of the Cross; Messrs. Sharp, Dublin, for the stone groining of the aisles, oak pulpit, and the polishing of the marble columns; the Wood-block Flooring Company, London, for the oak-block floors of the nave, aisles, and transepts; T. C. Edwards, Ruabon, for the ceramic mosaic passages of the nave, aisles, transepts, baptistry and porches; Ludwig Openheimer, Manchester, for the gold, &c., mosaic of the shrines; Messrs. M'Gloghlin & Sons, Dublin, for the ornamental brass and iron work of the triforiæ arcades, the shrines, gas standards, and candelabra; and Messrs. Murray & Son, Youghal, for the pitch pine bench seatings of the nave, aisles, and transepts. A large amount of sculpture work has been carried out in the building, and Mr. Harrison, of Dublin, is now engaged on the sculpture of the west doorway.

Books.

Elementary Architecture: for Schools, Art Students, and General Readers. MARTIN A. BUCKMASTER. Oxford: Clarendon Press. 1898.

"ELEMENTARY ARCHITECTURE" is another testimony to the increased interest in the subject which is now being taken by educational bodies. The author holds an official position, being described as "Art Master at Tonbridge School, and Art Examiner to the Department of Science and Art, the Oxford Local Examinations Delegacy, the Civil Service Commission, the Technical Education Board of the London County Council, &c." The publication of the book is undertaken by that great source of instructional works, the Oxford Clarendon Press; an origin which, in itself, confers distinction and a species of authority. We were accordingly prepared to welcome a useful—it might even prove an important and valuable—addition to the already fairly long list of architectural handbooks. To be obliged, therefore, as we are, to record our conviction that the only satisfactory portion of the book is the preface, is a genuine disappointment. The sentiments and aims with which the author sets out are unexceptionable—indeed, most excellent. We might quote, but for considerations of space, the whole of his preface with unqualified pleasure and approbation. He raises very high hopes. But, unfortunately, his aptly expressed admiration for his subject bears no proper relation to his capacity for treating of it. If Mr. Buckmaster's acquaintance—we will not say with architecture itself, but merely with current architectural literature, were in any degree commensurate with his ambition, he might have produced an admirable work: as it is, his book scarcely seems to justify its existence, or, at any rate, its publication. For it would not be difficult to name a dozen books of similar or not much greater bulk, and some of them published many years ago, any one of which could better be recommended to the class of readers for whom this book is intended.

From the many elementary treatises already in existence Mr. Buckmaster's book is not distinguished by special merit in any particular direction; we cannot find that it contains new facts, original observations, improvements in methods of arrangement, or even fresh illustrations; in short, it adds nothing to the student's available sources of information. It has all the appearance of a mechanical, indiscriminating compilation from a very limited number of authorities of rather ancient date, and evidences of personal research or even reflection are wanting. The old pernicious habit of concentrating attention chiefly on curious details pervades the work: broad and philosophic handling seems to be outside the author's range of thought. The choice of illustrations is peculiarly unhappy. The majority of them are about the last things which ought to be set before a student as examples—poor reproductions of originals which may have been thought meritorious half a century ago, but which, as compared with contemporary drawings, possess neither accuracy nor spirit. The fact that masonry is usually represented without any joints sufficiently stamps the value of these representations. The date of "1898" on the title page positively looks like a mistake; except for the presence of three or four photographic views, the whole work might very well have been produced in the "forties." it should be added, that the book contains a short glossary of technical terms, but no Index.

The Manufacture of Glazed Bricks and Glazed Sanitary Ware. By H. ANSELL. Second Edition. London: H. Greville Montgomery. 1898.

THIS second and larger edition of a very useful little work, "entirely re-written and revised," appears opportunely in view of the great interest taken at the present time in the subject of lead-glazing. The general contents of the work may be summarised as a description of modern methods in use in the manufacture of glazed bricks, &c.; this is followed by a list of recently-adopted bodies and glazes, and others which have been in use a long time and have proved to be efficient, or are adapted to special clays and for particular articles. Bodies and glazes suitable for large goods, such as porcelain baths, sinks, &c., are also dealt with at some length.

The author gives a good account of the fireclays met with in different parts of the country from the point of view of their uses, and subjoins several chemical analyses. In some cases these latter are interpreted, in an elementary way; this part of the subject could have been enlarged upon to advantage. In regard to machine-made bricks for glazing it is noted that the stream of clay issuing from the die must be perfectly sound at the angles. This is easily secured with dies of nearly any class as long as the clay is maintained at an uniform and suitable stiffness, and the speed at which the pug is driven is maintained without much variation, particularly as to sudden increase of speed. On the other hand, variations in any of these respects, and insufficient lubrication of the die, quickly cause the expressed clay to break and tear at the angles, and any water getting into these causes a crack which no subsequent process will eliminate. The cross cutting of the wires also jags the edges slightly, and, owing to the oil or water lubrication of the rolls or table, only one face of the brick is clean and suitable for a glazed face. The operation of the ordinary pug also, in producing "lamination" in the brick, is also a source of difficulty as tending to produce pinholes in the glaze. It is now generally recognised that to get the best results one of the chief conditions is that the clay shall issue in a stream of the size of the brick and be cut off in brick lengths so that the grain of the clay, and the surface in particular, should be in the

direction of the length of the brick, approximating to the hand-made brick. The book contains much information on these and kindred topics, in a concise form.

The chief part of the book is occupied by a description of body and glaze materials. Amongst these china clay naturally holds a foremost place as the main constituent of the "body," then come the ball clays and blue clays from Dorsetshire, Hampshire, and North Wales. In the section on flints we get a little metallurgy. The author observes that ground flint resists shrinkage more than any of the other compounds of a "body," it is one of the chief antidotes of crazing in body or glaze, but if used in excess will cause "shelling off" of the glaze. The uses of Cornish stone, whiting, plaster of Paris, and felspar are duly recognised. In reference to plaster of Paris it is noted that the old idea that this substance was necessary to enable a glaze and body to be used on white hard clay goods has been given up. The idea probably arose from the fact that it may have slightly lessened the contraction of the bodies and glazes, which thus enabled them to give better results than without it. Nevertheless, it does assist in breaking up and rendering uniform the particles of other materials of which the mixture is composed, thus rendering considerable service.

Frit glazes are dealt with at some length; they are glazes principally used for white and other Staffordshire tiles, pottery, &c., and are also employed for the purpose of softening and adding brilliancy to hard glazes. Many firms, however, do not use them, as the quality of the brick on which they are put is liable to be seriously interfered with. On the other hand, where the clay used in making the bricks is of indifferent quality, frit is employed so that less heat shall be required to flux the glaze proper than would otherwise be the case, thus saving the brick from being over-fired and becoming brittle.

White lead gives the greatest brilliancy of surface, but, as is well known, is dangerous to workpeople unless very carefully dealt with. It is by no means indispensable for such glazes as are above alluded to. The author remarks that white lead is also objectionable owing to its volatile nature and somewhat irregular action, requiring great care and watchfulness when at the point of finishing, and, moreover, imparting a dark hue to the glaze. When burnt, a glaze containing much lead is soft, easily scratched and defaced, whilst it is readily attacked by acids and is often materially affected by the action of the weather.

A chapter devoted to white bodies with glazes gives many recipes; ivory, cream, and coloured bodies and stains are discussed in the same manner; and other chapters deal with majolica glazes and enamelling. The subjects of setting and burning are briefly discussed, and the work concludes with some observations on porcelain ware. This book should prove most useful to manufacturers of glazed bricks and glazed goods generally.

A Short History of Hampton Court. By ERNEST LAW. With numerous illustrations. London: Geo. Bell & Sons. 1897.

Hampton Court. By WILLIAM HOLDEN HUTTON, B.D. With illustrations by Herbert Railton. London: J. C. Nimmo. 1897.

MR. LAW'S book is simply an abridgment or *résumé* of his great work on the history of Hampton Court, the value and thoroughness of which have already been fully acknowledged and described in our columns. The present publication is a one-volume book intended for a wider public than could be expected to require the large three-volume history. All that seemed essential has been reproduced in the small book (which after all contains more than four hundred close pages), but much topographical detail and discussions on art and archæology have been omitted, and it has not been thought necessary to give authorities or references, for which the reader can consult the original work.

Those who are interested in Hampton Court have now therefore available a trustworthy and authoritative history of the place, by a writer who has made the subject his own, comprised in one volume of convenient size. The illustrations are such as to give information rather than to aim at artistic effect. This, in short, is the "lesson-book" on the subject, in comparison with which Mr. Hutton's volume may stand as the "play-book." As Mr. Hutton frankly owns his indebtedness to Mr. Law's book, his own might be thought rather superfluous; but in fact it seems to be written partly to accompany Mr. Railton's sketches, which are in his very best style; in fact a book on this comparatively small scale could hardly be more beautifully illustrated. The writing, though in an easy anecdotal style, gives a good general idea of the history of the place and of the distinguished persons who have inhabited or been connected with it, and the sovereigns who have played "high jinks" there; an expression certainly not too strong for some of the saturnalia held there by James I., at all events. The author's remarks on Wren's work there are sensible, though it is going a little too far to say that Hampton Court as he planned it would have rivalled Versailles, as far as architectural grandeur is concerned; it was no doubt the intention of William III. that the grounds should emulate Le Nôtre's work. It is doubtful if "every detail," in our sense of the words, "passed under Wren's eye." All the practical details of planning and arrangement probably did; but it is probable that decorative detail, as far as there is any, was left a good deal to the instinct and habit of the contemporary artisan.

Mr. Law's book is one to be read for information and kept in the Study bookcase; Mr. Hutton's is one to be read for amusement and laid on the drawing-room table as an ornament, after the fashion in country-houses. For this purpose it could not be better—it is well bound, well printed, and well illustrated; and just well enough written to dip into at an idle moment.

The Renaissance in Italian Art (Sculpture and Painting).—By SELWYN BRINTON, B.A. London: Simpkin, Marshall & Co. 1898.

THIS is a very small book for so large a title; but we gather from the preface that the author's object has been to catch those who are not likely in the first instance to buy or read large works on the subject, and to lead them up to the wish for the further knowledge to be gained from standard works. In this way it may certainly be useful, as it appears to be written with a competent intellectual grasp of the subject, and the concluding chapter, on "the Enigma of the Renaissance," places in a striking light the intellectual and moral effect of the worship of ancient art in the Renaissance period. On one side were "Savonarolo's tremendous sermons," on the other side this beautiful dead world of Heathendom.

"It was like opium to them, this breath out of the beautiful dead past, that crept up and encircled them in its magic; no preaching could reach them then, no priest or monk really bring them back into the old narrow ways that had sufficed their forefathers.

We watch them, like men spellbound, ceasing to care greatly for war or politics or (almost) futurity, expressing with their whole souls this marvellous dream that was holding them, in forms of hybrid and strangely fascinating beauty, grasping with their whole powers of life at yet further, completer, more satisfying expression and knowledge."

It is not often thought necessary, in small handbooks, to go into this aspect of the subject; writers of such books are too often content with merely cataloguing works of art and artists. But surely the first thing in leading people up to any comprehension of Renaissance art, is to assist them to realise the extraordinary phenomenon which it presents from a philosophic point of view; to understand what it was and what it meant. It is this perception which redeems Mr. Brinton's little volume from the ordinary category of popular handbooks.

TRADE CATALOGUES.

MESSRS. A. BOYD & SON send us their illustrated catalogue of Fireplaces, "Decorative Section," containing illustrations of some large fireplaces in various styles, and a number of smaller fireplaces. Among these the best in an artistic sense are the more simple ones. The drawings perhaps do not do full justice to the others, but neither drawing nor design are quite up to the best standard. There has been a great advance lately in this kind of design for trade productions, the designs being often made by eminent architects and furniture designers, and the kind of work shown here is not up to such a standard, though for practical purposes we have no doubt these fireplaces are excellent.——The London Portland Cement Co. send us their catalogue of "Scagliol" building slabs, a material which has been already specially noticed in our columns.——The book of illustrations sent us by the makers of "Stephens' Inks" can only come within our scope for notice in regard to the view of the new premises now building in Aldersgate-street, which seems to promise to be a pleasing specimen of street architecture; they might as well have added the architect's name.——The Non-Flammable Wood Company send us a pamphlet with a history and description of their process, which has been already noticed in our columns.——The N. A. P. Window Company send us several additions to their illustrated catalogue, including their "air-tight" centres for centre-hung fanlights, to avoid draught through the centre; their "concealed stay" for casement windows, which when the window is closed disappears into a mortice in the frame; this is a real improvemment in regard to appearance. They also send a section of their wet and draught excluder for the bottom rail of a wooden casement sash, made with the special object of having as little projection as possible above the floor, for windows opening down to the ground; we doubt, however, if it would entirely keep out a driving rain.

BOOKS RECEIVED.

THE YOUNG ESTATE MANAGER'S GUIDE. By R. Henderson (W. Blackwood & Sons).

GEOLOGY FOR BEGINNERS. By W. W. Watts. (Macmillan & Co.).

Correspondence.

To the Editor of THE BUILDER.

REIGATE COMPETITION.

SIR,—It may interest your readers to know that we addressed the following questions to the Reigate Borough Surveyor:—

"Who are the assessors referred to in the conditions—are they of established reputation in the architectural profession?

"Is it the Council's intention to employ the competitor placed first, provided he is professionally of good standing?

"Have the conditions received the approval of the Royal Institute of British Architects?"

We have received the following reply:—

"DEAR SIRS,—I am in receipt of yours of yesterday, and in reply much regret I have nothing more to add to the conditions of competition supplied you.—Yours truly, (Signed) W. H. PRESCOTT,
Borough Surveyor."

Comment seems superfluous. ICARUS.

*** The above letter arrived too late for insertion in our last issue.

HORSHAM CEMETERY CHAPEL COMPETITION.

SIR,—In your last issue you have a Note upon the proposed Horsham Cemetery Chapel competition, and as the information therein contained is misleading in reference to my action, I shall be obliged if you will permit me to state the facts, which are as follows:—

Upon receiving an invitation to submit a design, I wrote stating I should be pleased to do so provided the committee would grant an extension of time, and stated that I presumed definite instructions would be issued to each competitor, viz., as to scale, style, material, cost, if under motto, and upon the usual terms to the successful architect; in the report of the *West Sussex County Times*, upon which your Note is based, no mention is made of these facts beyond that as to the extension of time.

I then called upon the secretary to the committee to emphasise the necessity for definite conditions, and stated that unless these were given I should not be prepared to submit a design. These points were brought before the committee, who granted an extension of time, but still left all other matters to the discretion of the competing architects. I then wrote withdrawing from the competition.

FREDERICK WHEELER.

*** We congratulate Mr. Wheeler on his decision. This was perhaps subsequent to the newspaper report on which we commented.

A SANITARY ANACHRONISM.

SIR,—In No. 2 of *Harmsworth's Magazine* is a picture entitled "Making a marriage in the olden time." We are accustomed to costume pictures in which wigs, knee-breeches, and cocked hats are prominent features; but never in a work of this class have I seen such praiseworthy insistence on the necessity of carrying the soil pipe up the roof well out of the way of the dormer window.

NORMAN WIGHT.

The Student's Column.

SOUND, LIGHT, AND HEAT.—X.

SOUND: THE PHOTOPHONE.

IT is not generally known that sounds may be transmitted over long distances by the agency of a simple ray of light. The instrument enabling this to be done is called the photophone. In some electrical experiments it was discovered that sticks of the metal selenium, although an excellent medium of resistance in most cases, failed to a certain extent in others. At one time one of these sticks would prove a bad conductor, and at another unaccountably become a comparatively good one. It was ascertained that this peculiarity was due to the variation in the quality of light falling upon the selenium—a stick which offered a certain resistance to the electricity in the dark only offering one-half the resistance in daylight. From its variable resistance in the electric current it will be seen that a galvanometer could be employed in demonstrating the action of light on the selenium, the variation of the current running *pari passu* with that of the light.

Graham Bell soon found that the telephone could also be employed in showing the action of light on selenium. His further discoveries in this direction are summarised by Mr. William Ackroyd, who reminds us that the telephone only emits sound when a rapidly variable current of electricity is passing through it, and consequently no sound is given out so long as the regular current from a battery passes through the telephone in unvarying strength continuously and steadily; therefore, to make a telephone give out sound owing to the action of light on selenium placed in the circuit, it was found necessary to rapidly vary the quantity of light falling on the selenium, so as to produce a rapidly variable current passing through the telephone. This was soon effected, and it was discovered that the necessary variation in the quantity of light might be produced a very great distance away—that, in short, various sounds might be impressed on sunbeams travelling with marvellous rapidity, to be re-converted into sound by the selenium receiver, or cell, a long way off. Ackroyd further remarks that in the apparatus devised by Graham Bell, the rapid changes from light to darkness producing the required variations in the conductivity of the selenium led to changes in the latter corresponding in frequency to musical vibrations, and a musical note was in consequence emitted by the telephone. It will be perceived that the active agent is a sunbeam, whilst the sound effect depends upon the rapid variation of an electric current. We all know of modern experiments in wireless telegraphy, but here was a method invented many years ago of transmitting sound over long distances by means of a beam of light only.

So far, however, Bell could only send a musical note by this means. It occurred to him subsequently that speech could be sent in the same way, and the difficulties were gradually overcome. He caused the light to influence or vary the current of electricity passing through the selenium, just as sound-waves are made to influence or vary the current of electricity passing through the carbons in a microphone; so that just as the telephone reproduces speech in the latter case, so also it was made to do in the former. We need not describe the various forms of receivers and transmitters used in these experiments, but the form of photophone which, according to Ackroyd, appears to have given the most satisfaction, is a thin piece of looking-glass framed and placed at the end of a speaking-tube, in such a position as that it may be set in vibration by means of the voice. The mirror is, of course, as flexible as possible, and the student will understand that a beam of light reflected from its face is varied by the vibrations alluded to. In other words, the mirror acts as a transmitting instrument, for when a parallel beam falls on it, and is reflected, the quantity of light which reaches the distant selenium receiver evidently depends upon the state of the mirror's surface at that moment. To collect or receive the sonoriferous beam Messrs. Bell and Tainter devised a parabolic reflector having a selenium cell in its focus connected by wires to the telephone and battery. Various other improvements have been made from time to time, but the principle remains the same. For instance, in the course of their experimental work the two last-mentioned observers found that a sonoriferous beam possesses the power of causing most substances to emit sound when they are placed in its path, so that the selenium receiver, battery, and telephone could be dispensed with. From this it has been demonstrated that solids, liquids, and gases placed in test-tubes are efficient sound-producers when a sonoriferous beam is converged on to them.

Sound Produced by Radiant Heat.

An outcome of these experiments with the photophone, foreshadowed in the last sentence, is the relationship existing between radiant heat and sound. The salient phenomena are conveniently demonstrated by Duboscq's apparatus, which is an arrangement by which an intermittent beam of radiant heat may be made to act on various bodies. It consists of a disc mounted on a horizontal axis, and which can be rotated at any desired speed. The disc is perforated by a series of holes, the numbers of which are in some multiple of the ratio 4 : 5 : 6 : 8. On the stand is a support, bearing a screen and wide tube, behind which is whatever source of radiant heat that may be employed. If the rays of the latter are to be concentrated on one series (or line) of holes a double convex lens is fitted to the support, or a cylindrical lens when a slice of thermal rays is to be used.

Tyndall showed that when a long-necked flask of a certain shape, containing a small quantity of ether, was placed so that the intermittent beam from a lime-light could fall on it, a distinct musical note was heard in an ear-trumpet attached to the flask. Amongst liquids it has been found that the best absorbers of heat give the loudest sounds by the method. The pitch of the musical note depends on the rapidity with which the disc is rotated.

Tyndall did not succeed in getting dry air to emit sound when acted upon by the intermittent beam, though moist air did; other gases yield sounds in the order of their absorption of heat. Sounds were not so clearly brought out when solid bodies were acted upon. In this connexion the ear-trumpet invented by Mercadier may be alluded to. The plates of various materials to be experimented with were, one at a time, fixed in the mouth of this ear-trumpet. Atkinson observes that when the intermittent beam is allowed to act on this plate it is set in vibration and a sound is produced. This is not due, at any rate chiefly, to transverse vibrations of the plate, for neither the pitch nor the quality of the note was altered when the thickness and nature of the plate were changed, nor was it altered when the plate was slit. The best effects were obtained when the diaphragm was of thin metal foil coated with lampblack on the side next the rays. Marked effects were also obtained when a transparent plate was used blackened on the side away from the rays. The effect is one of radiant heat, and is essentially due to alternate expansions and contractions of the layer of air in contact with the surfaces which absorb the radiant heat.

We have seen that a great number of substances are thrown into vibration by the intermittent action of light; Lord Rayleigh has demonstrated that, as was originally thought, the sounds in question are due to the bending of the plates (when these are used) in consequence of unequal heating. This view is now generally adopted.

The Phonograph.

It is unnecessary to describe this well-known instrument in detail, but some of the principles involved may be briefly alluded to. It is an instrument for recording and reproducing sound, and consists essentially of a cylinder mounted on a horizontal axis, which can be rotated beneath a mouthpiece. The shaft of the handle attached to the horizontal cylinder has a wormed thread, which as the shaft is rotated works in a correspondingly grooved bearing. A helical groove is cut upon the surface of the cylinder of the same "pitch" as the wormed thread upon the shaft. Thus, it will be seen that as the latter is rotated, the cylinder moves backwards or forwards, as the case may be.

The mouthpiece is fixed over this cylinder and the bottom of it consists of a highly-sensitive diaphragm or membrane. Between the membrane and the cylinder a style is so arranged that one side of it—the point—shall be directed towards the cylinder, and work over the helical groove alluded to, whilst the other side touches the membrane. A sheet of tin-foil is stretched across and around the cylinder, care being taken not to impress it in the grooves, but that it shall be stretched across them from the ridges between the grooves. It will be seen that the point of the style just touches the tin-foil over the grooves, whilst the other side of it touches the membrane.

On the operator speaking in the mouthpiece, the diaphragm is set in vibration,* which vibration sets the style in motion and causes its point to make an indentation on the stretched tinfoil. The cylinder is rotated at the same time as the operator is speaking, and the depth of the indentations in the groove made by the style will vary with the inflections of the sound of the voice; in other words, the bottom of the groove becomes a mechanical record of the vibrations of the diaphragm, and therefore of the sounds which caused these latter. To reproduce these sounds at any future period, it is only necessary to replace the point of the style in the beginning of the grooved record and revolve the cylinder as before; the style will then set the diaphragm in vibration, and the sounds thus produced will issue from the mouthpiece, and they may be made audible to a large audience. Speech may thus be stored up for an indefinite period, and may be reproduced several times from the same record.

The Graphophone.

This instrument is for the same purposes as the phonograph, but there are several differences in construction. It is essentially of three parts; the recorder, the cylinder, and the reproducer. The cylinder is coated with a composition of wax and paraffin, and is mounted horizontally, as in the phonograph. The recorder is mounted on a bar in front of this cylinder; it consists of a minute chisel fixed to a mica diaphragm, which is at the end of a flexible tube provided with a mouthpiece. On the latter being spoken into and the cylinder revolved, the diaphragm vibrates and the chisel point cuts a sinuous groove on the wax composition, which groove is an exact reproduction of the sound wave. The principal difference, therefore, between the graphophone and the phonograph is that in the former the sound is recorded by engraved sinuous grooves, whilst in the latter that is accomplished by a process of indentation. The reproducer† is a light ebonite tube, at one end of which is a mica diaphragm, which is connected by means of a fine, waxed silk thread, with a fine steel point or hook which rocks on a pivot at the end of the tube. There is an arrangement by which this reproducer can be clamped in front of the recorder, so that when the cylinder is rotated the reproducer travels at a proportionate speed, allowing the small point to rest in the groove forming the sound record, and along which it rides and vibrates, the sound being thus reproduced.

* See last article, p. 194 *ante*, as to the vibration of membranes.

† See "Ganot's Physics," 1892, p. 277.

GENERAL BUILDING NEWS.

CATHOLIC CHURCH, ECCLES.—The new Catholic Church of St. Mary was opened on the 15th ult. by the Bishop of Salford. The memorial stone was laid by Sir Humphrey de Trafford, on August 28, of last year. A presbytry has also been built. The church is 125 ft. long by 55 ft. wide. The height of nave to the wall plate is 34 ft., with lofty arches of 20 ft. span, without clearstory. A reredos has been presented by Lady Annette de Trafford; it has been worked by Bolton, of Cheltenham; and an east window, the gift of Miss Annette de Trafford, is by Meyers, of Munich. The church is thirteenth century in style. Messrs. Southern & Sons are the contractors; the mosaics are by Messrs. Williams; the lead-lights and some of the stained glasswork were by Mr. Chas. Lightfoot; the electric lighting by Messrs. Lomax, Kendal & Co.; the art metal work by Messrs. Hardman & Powell; and the architect is Mr. W. H. Rawle (late of Heathcote & Rawle), of Manchester.

RESTORATION OF ACTON CHURCH, CHESHIRE.—Acton (Nantwich) Church was reopened on the 25th ult. by the Bishop of Chester, after being restored. The work of restoration was undertaken about two years ago, when Mr. S. Timmis, of Liverpool, undertook to defray the cost of restoring the nave. The estimated cost of the alterations, the carrying out of which was entrusted to Mr. H. J. Austin, architect, Lancaster, was 2,500*l.*, but the decayed condition of the fabric rendered further restoration necessary, and the total cost was increased to about 6,500*l.* The restoration embraced the removal of the wall of the north aisle, and its re-erection in the original style, the removal of the old debased brick-lined clearstories, and the substitution of walls and windows, the erection of an oak and lead roof,

the strengthening of the tower, the erection of modern oak seats in place of the square pews, and a new pulpit. The work of restoring the chancel was undertaken by Lord Tollemache, the lay rector of Acton Church at a cost of 1,300*l.*, the work embracing the erection of an oak roof and the renewing of the Jacobean woodwork which remained from a former restoration. Mr. H. J. Tollemache, M.P., has defrayed the cost of erecting an organ chamber.

RESTORATION OF CHURCH, STOCKPORT.—St. Thomas's Church, Stockport, is to be restored and renovated under the direction of the architect, Mr. J. Medland Taylor, of Manchester. The work will be commenced early in October.

RESTORATION OF NEW ALRESFORD PARISH CHURCH, HANTS.—The parish Church of New Alresford, dedicated to St. John the Baptist, has just been reconsecrated after restoration. The original idea, according to the *Hampshire Observer*, was simply to repair the walls which had become dangerous, to remove the galleries which disfigured the church, and to extend the chancel. It was found, however, that the roof was in a dangerous state, and that nothing short of complete restoration could be attempted. Of the original Early English church all that now remains is a little window, which has been placed near the font, and one column, which has been incorporated into the three-light stained window in the chancel aisle This window was, till the present restoration, the east window of the church, but with the enlarged chancel it was found unsuitable, and so was removed, together with the carved oak reredos. The new chancel window is of plain glass, and consists of one large central light and two smaller lights underneath. The Early English church was, Sir Arthur Blomfield (the architect for the restoration) considers, of the date about 1200, and this gave way to a Perpendicular church about 1400. When this was burnt down in 1659 the authorities simply patched up the building in a haphazard fashion. Last year the wooden columns were found to be so rotten that their removal was imperative. When the plaster was cleared from the inside of the walls, and the stucco from the outside, the outlines were discovered of the windows of the Perpendicular church. The architect designed new windows to fill the openings thus uncovered. In one of the windows, the eastward one in the north aisle, the old stones and pieces of tracery have been used. The lower part of the old walls of the church remain, but the upper portions have been rebuilt, and the new roof is of oak throughout. The ringing loft has been raised and made sound, otherwise the tower has not been interfered with. The chancel has been extended 10 ft. eastward. The floor of the body of the church has been laid throughout with pitch-pine blocks, and the chancel with mosaics. The north and south aisles have been, by the removal of the galleries, considerably lowered. The earth outside has been cleared back, and open drains laid round to catch the water from the roof. The old flints have been largely used in the rebuilding of the walls, the buttresses being of Bath stone dressing. A somewhat unsightly brick porch has been removed from the north door, and the door itself has been renovated and polished. A new door of solid oak has been erected at the western entrance to the church. The church now consists of nave, north and south aisles, and transepts and chancel. The organ is placed in the south transept, and the vestries are at the rear of the instrument. The pillars dividing the nave from the aisles are of Bath stone. All the old tablets have been reincorporated into the walls. The total cost of the work has been about 6,000*l.*, and Messrs. Goddard & Sons, of Farnham, were the contractors. The old pews have been discarded, and the church is now seated throughout with chairs, and a kneeler is provided for each seat. At present the choir have to sit in chairs, but it is hoped that funds will shortly be forthcoming to erect stalls. The organ has been rebuilt by Mr. G. Conduit, of Alton.

RESTORATION OF RUSHTON PARISH CHURCH, CHESHIRE.—The parish church of Rushton has just been reopened after restoration. The architect for the work was Mr. John Critchlow, of Leek; the contractor, Mr. W. Grace, of Leek; and Mr. Roger Lowe, of Farnworth, has laid the block flooring.

RESTORATION OF ST. BARTHOLOMEW'S, WILMSLOW.—On the 29th inst. the Bishop of Chester will rededicate the chancel and Jesus Chapel of St. Bartholomew's, Wilmslow, near Manchester. The work has been carried out under the direction of Mr. Bodley.

CATHOLIC CHURCH, DONAGHMOYNE, CO. MONAGHAN, IRELAND.—The foundation stone has just been laid at Broomfield, Donaghmoyne, county Monaghan, of St. Patrick's new church. The architect of the new church is Mr. G. L. O'Connor, of Dublin. The building is Gothic in style, cruciform in plan, with nave, transepts, and sacristies. Lancet windows will be placed in the alternate spaces between the buttresses.

IMPROVEMENTS AT FRANKFORD CATHOLIC CHURCH, TULLAMORE, IRELAND.—At Frankford Catholic Church a new belfry and bell are being erected. The work is being carried out from plans and specifications by Mr. Walter G. Doolin, M.A., architect, Dublin.

CHANCEL, ST. PETER MANCROFT, NORWICH.—On the 28th ult. the new altar which has been erected at St. Peter Mancroft was dedicated. The chancel, which has not been used for some months past—during which works of restoration have been proceeding—was reopened on this occasion. Extensive works of restoration have recently been carried out at this church. In January last the following report on the chancel floor levels was received from Messrs. W. Bucknall & G. N. Cowper, architects, of Westminster, who completed the restoration of the tower some few years ago:—"The levels of the chancel floor of St. Peter Mancroft, Norwich, as they are at present, are very evidently not the original levels. They are, moreover, very detrimental to the dignity of the church. The great height of the presbytery floor, which remains very nearly at its original level, is very unusual in an English parish church. It is, of course, accounted for by the passage beneath this part of the church, which is now no longer used. Beside St. Peter Mancroft, two other notable examples of this feature in Norfolk churches may be mentioned, viz., St. Gregory's in Norwich, and the parish church of Walpole St. Peter. In both these churches the presbytery floor is even higher, and it is accounted for in the same way, viz., by the existence of a passage underneath. But, unlike St. Peter Mancroft, the levels in these cases appear to remain very much as they originally were, and they are therefore valuable examples to be borne in mind in the present instance. The chief point of difference between the levels of these two chancels and the present levels of St. Peter Mancroft is that, in the former the main flight of steps occurs eastwards of the choir stalls. Thus the higher level is confined to the presbytery, and much greater dignity is given to the whole appearance of the church. A raised presbytery was, as already implied, a thing avoided in English parish churches, while a raised choir would seem to have been unknown to them. But where the former exists it is a misfortune that the dignified effect of which it is capable should be spoilt by placing the choir stalls on the same level. It is, therefore, proposed to bring these down to what was, beyond all doubt, their original level of one or at the most two steps above the level of the nave, and at the same time to reclaim for their use the western-most bay of the chancel, which, to the great destruction of the dignity of this very fine church, has been utilised for some of the nave seats. It is quite evident from the bases of the pillars that the original levels at St. Peter Mancroft were similar to those of the above-mentioned churches. There are also indications showing that the present floor of the presbytery is at its highest part some seven inches lower than the original level. This can either be restored at the same time, or left as it is, as far westwards as the temporary wooden floor, which should in either case be removed. As regards the material of the floor and steps, we should recommend that the existing stones should be used as far as possible, and that the rest should be made up in plain stone to match. Of far more importance than any elaborate pavement is the restoration of the old levels, and the cost of a small portion of elaborate pavement would go far towards meeting the expense of this. Moreover, in the two above-mentioned churches the chancel floor is all of plain stone; and so it is in most churches of this date. And, whether their original floors were or were not more elaborate, the plain stone is eminently satisfactory and at home in England. If, however, money for it is forthcoming, some bands of small glazed green and yellow tiles in elaborate patterns would be the most desirable form of enrichment at present at disposal for the fabric of the floor. Marble and Italian mosaic should be rejected as unsuitable to England and entirely out of keeping with this most typical English church. But we should recommend, as of the next importance to the restoration of the levels of the floor, a decoration which can be added to it in the form of some really fine and suitable ancient Oriental carpet." After discussion it was agreed by the vestry to authorise the vicar and the churchwardens to apply at the Consistory Court for a faculty for carrying out the work of the restoration of the chancel to the original levels on the lines of Messrs. Bucknall & Cowper's report, and also to form a side chapel on the north side of the church for daily service, and this has since been done, and the work completed, the chancel floor having been generally restored to what is believed to have been its original level, and the side chapel formed as desired. In the course of the operations an interesting discovery was made of a staircase leading from what is believed to have been the priest's chamber under the organ and leading up to the altar. The remains of this staircase have been preserved and an iron grating placed above them. Practically the whole of the work has been executed by Messrs. J. Downing & Son. The new altar was made by Mr. G. E. Hawes, of Norwich.

MANSION, PERTH.—A new mansion house is in course of erection for Mr. Rufus D. Pullar. It is built on the side of a hill on the Crieff-road, about a mile and a half from Perth. The architects are Messrs. Francis W. Bedford & Sydney D. Kitson, of Leeds. The clerk of works is Mr. D. Robertson, and the following contractors are being employed upon the works:—Excavators and concrete, Messrs. D. R. Taylor, Perth; steel work, Messrs. P. & W. M'Lellan, Limited, Glasgow; masons' and bricklayers' work, Messrs. J. & C. Hay, Dundee; carpenter and joiner work, Messrs. Stewart & MacFarlane, Perth; plumber and drainage work, Messrs. Frew & Son, Perth; plasterer's work, Messrs. J. Mackay & Son, Perth; glazier's work, Mr. C. Alexander, Perth; leaded glazing, Mr. W. Pape, Leeds; ornamental glazing, Mr. W. Pape and Mr. Stephen Adam, Glasgow, and Messrs. G. Walton & Co., Glasgow; electric light installation, Messrs. Ernest Scott & Mountain, Newcastle; electric bells and speaking tubes, Messrs. Westwood & Sons, Perth; ornamental plaster work, Mr. G. P. Bankart, Leicester; hot water heating, Messrs. H. Walker & Son, Newcastle-on-Tyne; casements, Messrs. Williams Brothers, Chester; lift, Messrs. John Bryden & Sons, Edinburgh; carving, Mr. J. Hayes, Edinburgh; tiling, Messrs. Field & Allen, Edinburgh, and Messrs. C. W. Williams & Co., Manchester; panellings and interior woodwork, &c., Messrs. Marsh, Jones, Cribb. & Co., Leeds; Messrs. Stewart & MacFarlane, Perth; and Mr. C. Grant, Perth.

CLUB HOUSE, LONDONDERRY.—Mr. Joseph Ballintine has obtained the contract for the new club house for the Foyle Rowing Club. The site of the building is on the Strand-road, with a frontage of 30 ft. to the river. The upper portion of the building will consist of an entertainment room, which will be constructed to accommodate 200 persons. The building is being erected from the plans of Mr. J. P. M'Grath, C.E., architect, Londonderry.

MIDLAND RAILWAY HOTEL, MANCHESTER.—The Improvement and Buildings Committee of the Manchester Corporation have passed the plans for the Midland Grand Hotel, to be erected by the Midland Railway on the site now being cleared close to the Central Station. The hotel will have frontages to Peter-street, Mount-street, Lower Mosley-street, and Windmill-street. Granite is to be the material used in the lower part of the superstructure, and the main building above this will be of terra cotta. A concert hall forms a part of the design.

PROPOSED ISOLATION HOSPITAL, LOWESTOFT.—On the 24th ult. an inquiry was held at Oulton Board School, Lowestoft, by Mr. Samuel Walter Wheaton, M.D., an inspector of the Local Government Board, into an application by the Mutford and Lothingland Rural District Council for powers to borrow 2,700*l.* for the purpose of constructing an isolation hospital for the district. Mr. A. Smith (surveyor), and Mr. Clarke (architect), were among those present.

PROPOSED NEW HOTEL, MUNDESLEY, NORFOLK.—It is proposed to erect a new hotel at Mundesley. Mr. H. J. Green, of Norwich, is the architect.

PROPOSED NEW HOTEL, LLANELLY.—At the annual licensing sessions for the Llanelly Petty Sessional Division recently, Mr. William Griffiths, architect, made application for a licence for a new hotel at Llanelly, which it is intended to erect on the site of the old Bradbury Hall, opposite the new Town Hall.

PROPOSED NEW HOTEL, OVERSTRAND, CROMER.—It is proposed to erect a new hotel at Overstrand. The site of the proposed building is opposite the Ivy House Farm, on the road between Overstrand and Sidestrand. Mr. Boardman, of Norwich, is the architect. There are to be twenty-three bedrooms in the building.

UNIONIST CLUB, SOUTH SHIELDS.—On the 24th ult. the new club which has been erected by the Unionists in South Shields was opened. The new premises are situate in Catherine-street, and have been erected from designs prepared by Mr. J. H. Morton, architect, of South Shields. The building is four stories in height. The approach from the street is through a vaulted lobby to the entrance hall, and beyond is a staircase leading to the floors above. On the ground floor there is a reading-room, whilst opposite there is a smoke-room, and in the rear are cloak-rooms and lavatories. The first floor is utilised as a billiard room, and the second floor is so constructed that it can be divided into three small rooms by means of collapsible partitions. The building is lighted throughout with electricity.

COLLEGE BUILDINGS, NEAR NEWPORT.—Agricultural college buildings are being erected at The Ancellors, Edgmond, near Newport, for the Harper-Adams Foundation. Mr. G. I. Muirhead, of Newport, Salop, is the contractor, and Mr. H. Teather, of Shrewsbury, is the architect.

TECHNICAL COLLEGE, DERBY.—A new Technical College is being erected in Green-lane, Derby. The architects are Messrs. Waller & Sons, of Gloucester.

ASYLUM, INVERNESS.—The work in connexion with the first instalment of the additions made to the Northern Counties District Asylum, at Inverness, has just been completed. The addition consists of a new male hospital ward, which cost over 12,000*l.* Messrs. Ross & MacBeth are the architects. Other improvements are also proceeding at the asylum, the most important of which is the addition of a female hospital. The cost of the female hospital and nurses' rooms and kitchen improvements is estimated at 15,941*l.*, and the new boiler-house and boilers at 2,500*l.*, making a grand total of 30,571*l.*

OPEN-AIR BATH, LIVERPOOL.—On the 26th ult. the Lord Mayor of Liverpool opened a new open-air bath which has been constructed by the Baths Committee of the Corporation in Gore-street, off Stanhope-street. The bath, situated immediately

behind St. Matthew's Church, Hill-street, occupies the site of about fifty dwelling houses which were demolished some time ago as insanitary. Together with the gymnasium it covers an area of about 1,100 square yards. The gymnasium, which will be provided with the usual youths' gymnastic apparatus, is 44 ft. long, with an average width of 40 ft. Adjoining is a small bath, 6 ft. by 5 ft., supplied with hot and cold water, in which the lads may wash before entering the bath or using the gymnasium. Around the bath, which is only 3 ft. 6 in. deep at the greatest depth, are situated covered dressing sheds. The water in the bath is fresh water from the mains, and there is a drinking fountain for the use of the children. All the buildings are structures of red brick with terra-cotta dressings. Mr. W. R. Court the engineer and superintendent of the baths, designed the buildings. Messrs. L. Marr & Son, Liverpool, were the contractors.

ADDITIONS TO SCHOOL, SOUNDWELL, GLOUCESTERSHIRE.—Additions are to be made in connexion with the day schools at Soundwell. Mr. H. W. Bennett, of Staple Hill, is the architect, and the tender has been accepted of Messrs. Edwards Bros., Downend, at 1,619*l.*

ALTERATIONS TO THE PUBLIC SCHOOL, AIRLIE, FORFAR.—Messrs. L. & J. Falconer, Blairgowrie, have prepared plans and specifications for alterations to the public school at Airlie, and the contractors are—Masons, Crabbe & Ballentyne; joiner, Charles Ogilvy, plasterer, George Murray; painters, Barrie & Guild—all of Kirriemuir.

SCARBOROUGH COLLEGE.—The foundation-stone has just been laid of this building, on the Weaponness Estate, South Cliff. The architects are Messrs. Hall, Cooper & Davis, and the contracts have been entrusted to the following: Mr. W. Overton, brick, stone, and plaster work, 3,780*l.* 5s. 9d.; G. Scales, carpentry and joiner work, 2,500*l.* 7s. 5d.; Appleby & Brogden, ironwork, 283*l.* 10s. 1d.; G. F. Wells, plumbing work, 500*l.* 17s.; Joseph Hargrave, tiles, 613*l.* 6s. 6d.; Thomas Fidler, painting, 139*l.* 15s. 6d. Mr. C. H. Fehr, of London, will do the sculpture work. The total cost—apart from the furnishing—will be about 9,400*l.*

WORKHOUSE INFIRMARY, REDRUTH.—A new infirmary has just been added to Redruth Workhouse. Mr. Sampson Hill was the architect.

THEATRE, HANLEY.—A new theatre has been erected at the corner of Trinity-street and Foundry-street, Hanley. The new building is to be known as the Grand, and it has been erected from the plans of Mr. Frank Matcham, of London. Seating accommodation is provided for nearly 3,000 persons, while on an emergency standing room can be found for several hundred more spectators. The auditorium is 75 ft. wide and 78 ft. deep, the dimensions of the stage being 63 ft. wide and 44 ft. deep, with a scene dock and property room 40 ft. by 16 ft. The width of the proscenium is 32 ft., which, by a folding arrangement, can be increased to 41 ft., and thus enable an arena for circus performances to be provided by utilising part of the pit and the stage. Externally, the building is of red brick, with stone dressings. There is an installation of the electric light, and the heating is on the hot-water system. The contractor for the erection is Mr. T. Godwin, of Hanley. The cost of the site was 5,000*l.*, and the estimated cost of the building, including furnishing, is 20,000*l.* The clerk of works was Mr. J. F. Revill. The fibrous plaster decorations have been carried out by the Plastic Decoration Company, of London, the ordinary decorations and upholstering by Messrs. J. H. Morton & Sons, Liverpool; the iron construction by Messrs. Whitford & Co., London; the sanitary fittings by Messrs. Howson Bros., Hanley; the electric lighting fittings by Messrs. Laing, Wharton, & Co., London; the gas arrangement by Messrs. Jenkins, Leeds; the seating by T. Cavanagh; whilst Messrs. Dowson, Taylor, & Co., of Manchester, have supplied the fire extinguishing apparatus; and Messrs. Oldroyd, of Leeds, the heating apparatus.

LUMPHANAN PARISH HALL, ABERDEEN.—The new Parish Hall at Lumphanan, which has been erected by the Parish Council, was opened on the 26th ult. Accommodation is provided for between 400 and 500 persons, and there are cloak rooms for both ladies and gentlemen. Attached to the hall is a cottage for the caretaker. The building was designed by Mr. George Spark, Lumphanan, and the contractors were—Mason work, D. Calder & Co., Aboyne; carpenter work, W. G. M'Robbie, Lumphanan; slater work, Robert Wright & Sons, Aboyne; plaster work, George Morrison, Banchory; plumber work, Thomas Davidson & Co., Banchory.

NEWCASTLE GUILDHALL EXCHANGE.—After being altered and extended, the Exchange at the Guildhall, Newcastle, is about to be re-opened for business purposes. The heavy stone piers (ten in number) carrying the arches which supported the north wall and floor of the Guildhall have been removed, and the superstructure is now carried upon steel girders, resting upon four steel stanchions. The Exchange proper covers an area of 3,800 square ft., with a cubical space of 77,000 ft., and has its entrances on the north from the Sandhill, and on the south from the Quayside. On entering from the Sandhill, on the left are situated the porters', reading, and manager's rooms, with latrine accommodation. Entering from the Quayside, on the left will be found the writing-room, with the Chamber of Commerce over, the telegraph and telephone-room, with small committee-room over, and in front the smoking-room. The foregoing apartments are separated from the main Exchange by glazed screens. Increased height has been effected by lowering the old floor 2 ft. 4 in., giving a height to the Exchange of 20 ft. 6 in. The windows have been increased in size. The floors are covered with wood block flooring, supplied and fixed by Messrs. Geary & Walker, of London. The heating is by hot water on the low pressure system. The decorative fibrous plaster work has been carried out by Mr. W. R. Dodds, of Jarrow, the general contractor being Mr. Thomas Lumsden, of Jarrow. The work has been carried out from the designs and under the supervision of Messrs. Armstrong & Knowles, architects, Newcastle.

HOME (CATHOLIC), NEWRY.—In order to provide sufficient accommodation for the Roman Catholic male aged poor and orphan children, a building is being erected at the rear of the existing Home, Kilmorey-street. It is to be set apart for the sole use of the Sisters of Mercy. Mr. John Brown, architect, Newry, prepared the plans for the new structure, and Mr. Denis Neary, Newry, is the contractor for the work.

PROPOSED NEW THEATRE FOR BLYTH, NORTHUMBERLAND.—Arrangements are now in progress by the Blyth Theatre Company, Limited, for the erection of a new theatre, on ground in close proximity to the present theatre at Waterloo, Blyth. The plans have been prepared by Mr. Hope, architect, of Newcastle. The auditorium of the new building will be 67 ft. from the curtain line to the back of the pit and 66 ft. 6 in. wide. There are to be two tiers—the circle and the gallery. It is estimated that the theatre will seat 2,500 persons.

ALTERATIONS TO HOTEL, DUBLIN.—Some alterations have just been carried out at the Burlington Hotel and Restaurant, St. Andrew-street, Dublin. The contractor is Mr. James Pile, and the architect, under whose supervision the additions and alterations have been carried out, is Mr. J. J. O'Callaghan.

WORKMEN'S COTTAGES, PENSHURST.—In response to the advertisement recently inserted in the *Builder* by the Rural District Council of Sevenoaks for workmen's cottages for Penshurst, 113 applications for particulars were received and sixty sets of drawings sent in. Mr. Edgar Wood, F.R.I.B.A., of Manchester, was the professional adjudicator appointed by the Council, and he has selected the designs of Utility (on a tablet *) by Messrs. Taylor & Sons, of Aylesbury, subject to certain modifications, as most suitable to the requirements of the Council.

SANITARY AND ENGINEERING NEWS.

WATER SUPPLY, HUNTLY, ABERDEEN.—The new works in connexion with the additional water supply for Huntly were inaugurated on the 24th ult. The works were designed by Mr. James Barron, C.E., Aberdeen, and carried out by Mr. J. Hunter Clark, Elgin.

SEWAGE DISPOSAL, KIRKBURTON, YORKSHIRE.—The Kirkburton Urban District Council have had before them since last May competitive schemes from several engineers for the complete resewerage and sewage-disposal for the whole of their districts of New and Old Kirkburton. At a meeting held the other day to finally decide the question, it was resolved that the scheme submitted by Mr. T. Aird Murray, C.E., of Sheffield, be accepted, and that he be appointed engineer to the Council to carry out the scheme.

PROJECTED SHIP CANAL FROM THE GREAT LAKES TO THE HUDSON.—The British Consul-General in New York mentions in his last report that a preliminary examination has been made for a ship canal from the great lakes to the navigable waters of the Hudson River of a sufficient capacity to transport the tonnage of the lakes to the sea. In the report on this subject three routes are stated to be possible. First, from Lake Erie by the Upper Niagara River to the vicinity of Tonawanda or Lassalle, thence by canal with locks to the Lower Niagara River to some point on Lake Ontario, through Lake Ontario to Oswego, up the Oswego and Oneida rivers to Oneida Lake, through the lake and across the divide to the Mohawk River, and down that river to the Hudson at Troy. The second route follows the line of the Erie Canal from Lake Erie and the Niagara River through to the Hudson, or this line so modified as to provide a continuously-descending canal from Lake Erie to the Hudson. The third route coincides with the first from Lake Erie to Lake Ontario, running thence through Lake Ontario to the St. Lawrence River. and down that river to some point near Ogdensburg, crossing the State of New York to Lake Champlain, up the lake, and then following in general the route of the Champlain Canal to the Hudson at Troy. The relative merits of these routes are discussed in the report, and the first is considered the best; but the cost of construction is estimated at about 40,000,000*l.*, and the cost of maintenance at about 400,000*l.* a year. It is stated that such a canal would have no military value, and that it is not advisable that its construction should be undertaken by the Government. The opinion is expressed that if, beyond the improvements now being carried out under existing plans, the Erie Canal be further improved so as to be made navigable for 1,500-ton barges, necessary alterations being made in its alignment so as to give a continuously-descending canal from Lake Erie to the Hudson, and the Mohawk River be canalised, this would enable cargo to be transported from east to west at a cheaper rate than by a ship canal, and that the cost would be approximately one-fourth that of a ship canal.—*Times.*

* Six designs under the motto "Utility" were sent in.

FOREIGN.

FRANCE.—A fine ceiling painting, representing "The Seine and its Tributaries," has been placed in the Tribunal of Commerce at Rouen. It is the work of M. Baudoüin, a pupil of M. Puvis de Chavannes.——M. Marquiset, of Laon, has been elected President of the Société des Architectes de l'Aisne for 1898-99.——The new Bonnat Museum, at Bayonne, is nearly finished, and will be opened early next year.——A statue to Volney is to be erected at Craon (Mayenne) on the 19th inst.——The death is announced, at the age of fifty-four, of M. Henri Ding, sculptor, and Director of the Ecole de Sculpture at Grenoble. He was an artist of no ordinary powers. A figure of Christ which he exhibited at the Salon gave rise to a great deal of warm discussion in the artistic world. He was the author of the monument erected at Vizille in memory of the meeting of the States-General, and which was inaugurated in 1888. He was also author of a monument to "La Gloire de la Révolution," erected last year at Grenoble. The capital possesses a charming work from his hand, the "Enfant à la Source," in the garden of the Hôtel de Ville.——The death is announced also of the etcher Felicien Rops, an artist of very individual talent. He was a Hungarian by birth, but French by adoption. He first became known at Brussels, forty years ago, by various caricatures and lithographs, one of which, "Un Enterrement au Pays Wallon," obtained a great success. He then took up etching, and executed interior studies in the Dutch school. Unfortunately he made a less desirable kind of reputation by engravings of an immoral character.

MISCELLANEOUS.

TECHNICAL SCHOOLS FOR BOOTLE.—At the Bootle Town Hall, on the 23rd ult., Colonel W. R. Slacke, R.E., held an inquiry relative to the application of the Town Council to the Local Government Board for approval of the borrowing of 15,351*l.* for the erection of a technical school. The Town Clerk said there was no technical school existing in the borough other than that carried on under the Corporation. At present the school was conducted in rooms in the basement of the Free Library and Museum. It had been used as a technical school since 1891. But science schools had also been held there since 1887. They were not only inconvenient, but insufficient for the purpose. The site adjoined the Town Hall, and had been purchased by the Corporation, under the sanction of the Local Government Board, in February, 1897. The site comprises 3,106 square yards. The frontage to Balliol-road is 208 ft. and Pembroke-road 163 ft. The plans accepted were those of Messrs. Best & Callon. Twenty-two plans were received in competition. The cost of the building will be 20,000*l.*

LIVERPOOL TOWN HALL BALLROOM.—At the last meeting of the Finance Committee of the Corporation, a report from the City Surveyor as to the condition of the roof of the large ballroom at the Town Hall was approved, and it was decided, if necessary to have the roof and ceiling reconstructed, at a cos not exceeding 3,000*l.* It is understood that a serious development of dry rot was discovered in the roof, though unfortunately this was not ascertained until the work of redecorating the present ceiling was well in hand. The extra outlay is in addition to the 8,000*l.* already voted for certain alterations and redecorating of the Town Hall. It was hoped that the work originally sanctioned would be completed at the beginning of September, but the reconstruction of the ballroom ceiling will keep the place in the hands of the workmen for some two or three months longer.—*Liverpool Post.*

ARCHÆOLOGICAL DISCOVERY.—A discovery has just been made on the banks of the Clyde, at a spot between Dumbarton Rock and Dunglass. Through the efforts chiefly of Mr. Donnelly, artist, of Bowling, what is supposed to be a lake dwelling, or crannog, has been found there. It is thought that the remains belong to the same period as the occupation of the neighbouring hill fort of Dunbine, discovered a couple of years ago. The officials of the Helensburgh Antiquarian Society, who carried through the Dunbine excavations, have undertaken to make a thorough investigation of the supposed crannog.

"RIDLER'S" HOTEL, HOLBORN.—These premises are being pulled down for the extension of the Prudential Assurance Company's offices — Mr. A. Waterhouse, R.A., architect. "Ridler's," formerly the "Bell and Crown," was an old-established hostelry, standing next (east) to Furnival's Inn. The yard was built over long ago. The "Bell and

Crown" was the starting place of the mails to Southampton and Louth, and of various stage-coaches, including those which ran to Dover, Stamford, and Banbury.

THE ARCHBISHOP'S HOUSE, WESTMINSTER.—It is stated that this house, in Carlisle-place, Vauxhall Bridge-road, will shortly be pulled down, the site having been taken for a block of residential flats. Originally built as a club-house and library for the Guards' Brigade, it was purchased, 1873, as a residence for the Archbishops of Westminster, and was occupied during many years by the late Cardinal Manning until his death on January 14, 1892. In this house was preserved the white silk mitre worn by Thomas-à-Becket at Sens.

LEEDS MASTER BUILDERS' ASSOCIATION.—The annual meeting and excursion of the members of this Association took place on the 25th ult. at Studley Royal. The gathering was held in the ruins of Fountains Abbey. Mr. W. Nicholson, the retiring President, occupied the chair. The annual report, submitted by Mr. Ernest Schofield (hon. sec.), stated that the membership of the Association had doubled since 1896. Notices for alteration of rules had been received from the masons and joiners, but amicable settlements had been arrived at in both instances by agreeing to have a standing committee. Notice, however, must be given in November, so that the arrangement might be properly entered in the rules. The statement of accounts showed a balance in hand of 31*l.* 2s. 7d. The Chairman, in moving the adoption of the report, said that certain modifications had been made in the rules, one of which was the formation of a standing committee to settle all disputes; with a 49½ hours' working week. The joint standing committee were empowered to settle all threatened strikes or lock-outs. As to the state of the trade, it was a mistake for the public to think that builders were making their fortunes, because the increased cost of labour and materials had to be taken into account. They had also to remember that some of their contracts had been entered into some time ago, and might entail losses upon them. The last year had been a rather eventful year for the building trade, as it had seen the passing of the Workmen's Compensation Act, a measure which pressed heavily upon them. To meet this Act the builders had an insurance society, which was steadily increasing in membership. The position taken up by the labour party had forced the employers to form a federation for their own protection and for the benefit of the trade, but not for the purpose of fighting the men.—Mr. W. Irwin seconded the motion, which was adopted. Mr. Walker, of Armley, was elected President for the ensuing year, Mr. W. H. Dews vice-president, Mr. W. C. Ellisdon permanent secretary, and Messrs. Myers, Pickard, Irwin, Nicholson, Atkinson, Rhodes, Umpleby, and Schofield the committee, with Messrs. Season and Umpleby auditors. Votes of thanks were accorded to the retiring President and Hon. Secretary for their services.

SCHOOL OF ART WOOD CARVING.—We are requested to state that the School of Art Wood Carving, which has hitherto been held in the Central Technical College, South Kensington, has now been removed to the Imperial Institute, where rooms have been granted for its use, and where it will be reopened, after the usual summer vacation, on Monday, September 5. Free studentships, in both the day and evening classes of the School, are maintained by means of funds supplied by the City and Guilds Institute for the Advancement of Technical Education, and by the Drapers' Company. Some of these studentships are at present vacant, and forms of application for them, also information as to the School generally, may be obtained by letter addressed to the Manager, School of Art Wood Carving, Imperial Institute, London, S.W.

ELECTRIC LIGHTING SCHEME, LEITH.—The ceremony of laying the last brick on the top of the new chimney in connexion with the electric lighting station, now in course of erection at Junction-street, Leith, was performed on the 24th ult. Among those present were Bailie Manclark, Mr. W. Bryson, Electrical Engineer for the Corporation; Mr. Campbell, Deputy Town Clerk; and Mr. G. Simpson, Architect. Bailie Manclark was presented, on behalf of the builders, Messrs. Kinnear, Moodie, & Co., with a silver trowel. The chimney is 155 ft. in height, 18 ft. in diameter at the base, and 12 ft. in diameter at the top, with an internal diameter of 8 ft. 3 in. at the bottom, and 9 ft. 3 in. at the top. There is an internal shaft of fire brick to the height of 100 ft., built entirely independent of the outer walls of the chimney, having a space all round. This shaft is to bear the heat of the boiler gases, and the advantage of the space is that fresh air is admitted at intervals, which keeps the outer wall of the chimney cool, and prevents the possibility of cracking from expansion and contraction.—*Scotsman.*

YORK ARCHITECTURAL SOCIETY.—A party of members of this Society recently paid a visit to the district of Kirkham Abbey, and were enabled, through the courtesy of Mr. H. W. Cholmley, to visit Howsham Hall. This building is situated on high ground overlooking one of the most beautiful parts of the valley of the Derwent, and is approached from the lodge at Howsham Bridge by a carriage drive. According to tradition it was erected by Sir Thomas Hamburgh, during the early part of the reign of James I., of stone brought from the neighbouring abbey of Kirkham, but alterations were made about 1770, probably about the time the family left their ancient seat at Whitby, and made Howsham their chief country residence. The party proceeded by way of Barton-le-Willows, and were met on arrival by Mr. Mansfield, who conducted them through the chief apartments, which contain a number of valuable portraits and other paintings. The village of Howsham, which adjoins the gardens, is most picturesque. The church is modern.—*Yorkshire Herald.*

REPAVING OF THE STRAND.—The repaving of the Strand with creosoted deal wood blocks has been accomplished. The work was carried on night and day, one gang relieving the other at the end of the shift. The portion of the Strand from Terry's Theatre to the Hotel Cecil was opened on August 25, and a further portion to Adam-street on the following day. From Terry's Theatre to the west side of King William-street, which was commenced on August 15, was opened for traffic on the 29th inst.

DUNDEE INSTITUTE OF ARCHITECTURE.—The Hon. Secretary writes to point out, in reference to our notice of the Report of this Institute in our last, that the President's address referred to was not that of Mr. Cappon, but of the last year's President, Mr. Leslie Ower.

PRESTON BOROUGH SURVEYORSHIP.—The special committee appointed to consider the filling up of the post of Borough Surveyor, vacant by the death of Mr. Hudson Reah, have recommended to the Council the appointment of Mr. Thomas Cookson, who has for some years held the position of Assistant Surveyor.

NEW LINING BRICK FOR SWIMMING BATHS.—In reference to the paragraph on this in our last issue (p. 197 *ante*) the Farnley Iron Co. write to say that they are not the patentees but only the manufacturers. The patentees are Messrs. Balaam Bros, London. No intimation to this effect was given on the circular sent to us.

ST. CLEMENT DANES.—It is proposed to commemorate Dr. Johnson's membership of the congregation by placing, by subscription, a stained glass window in the church, at an estimated cost of 120*l.* Dr. Johnson's pew is in the north gallery, at the east end, and some years ago was marked by a brass tablet, set up at the expense of some of the parishioners.

CAPITAL AND LABOUR.

THE BRICKLAYERS' LABOURERS' STRIKE, SHREWSBURY.—For about three months the bricklayers' labourers of Shrewsbury have been on strike. They received 5d. per hour, and asked for 5½d. This the master builders refused, and offered 5¼d., which was at the time declined, and the offer was subsequently withdrawn. A settlement has, however, been arrived at, the men agreeing to accept the farthing advance, and the masters consenting to give it.

LEGAL.

A PONTEFRACT ARCHITECT'S CLAIM.

AT Pontefract County Court, on the 26th ult., Judge Raikes was occupied for several hours in hearing a claim brought by Messrs. J. H. Greaves & Co., architects, Pontefract, Castleford, and Goole, to recover 23*l.* 9s. 2d. from Messrs. Wigfall & Sons, brushmakers, Pontefract, balance of account for services rendered. Mr. Kemp was for the plaintiffs and Mr. Schofield for the defendants. Mr. J. O. Greaves, of Wakefield, sat with his Honour as assessor. The claim was in respect of the preparation of plans, &c., for the rebuilding of the defendants' works after their destruction by fire. Mr. Greaves' original estimate was for 2,000*l.*, but the specifications were cut down until the tenders accepted amounted to 917*l.* Even then, Mr. Wigfall, by striking down item after item, pared the total down to 731*l.* 14s. 7d. Mr. Wigfall then required plans of the conversion of a portion embraced in the original plans into a dwelling-house, and, as he refused to await the sanction of the Corporation before proceeding with the work, Mr. Greaves was put, it was claimed, to very great trouble. His Honour reduced the claim by 9*l.* 6s. 6d., and judgment was given for 14*l.* 2s. 8d., less 3*l.* 12s. 3d., paid into Court.—*Sheffield Telegraph.*

"ARCHITECTURE" IN COURT.

MR. JUSTICE PHILLIMORE, sitting as Vacation Judge, on the 21st ultimo had before him the petition of Carl Hentschel & Co. for the compulsory winding-up of "Architecture," Limited.

Upon the case being called on, counsel for the petitioning creditors asked that the case might be allowed to stand over for a week, saying that he understood there was a probability of somebody coming forward to take over the whole of the assets.

His Lordship: Does anybody object?

The learned counsel replied in the negative. He (the learned counsel) thought it right to mention that the statutory affidavit in support of the petition was filed out of time, and in the affidavit of service there was nothing to show that service had taken place on a servant of the company, although such service took place at the registered office of the company. Another point to which his Lordship's attention should be called was that the petition was advertised as being a petition for winding-up under the supervision of the Court, whereas it was for a compulsory winding-up.

His Lordship directed that the case should stand over for a week, the petition in the meantime to be re-advertised in the *London Gazette* and *Standard*. His Lordship waived the other points mentioned by counsel, but directed that the affidavit of service should be corrected.

THE BRIGHTON ANCIENT LIGHTS CASE.

THE case of Smith *v.* Costerton again came before Mr. Justice Phillimore, sitting as Vacation Judge, on the 31st ult., on a motion by the plaintiff, the owner of No. 12, Gloucester-place, Brighton, for an injunction to restrain the defendant, the owner of the next house, from building in the rear of his premises so as to darken or interfere with the plaintiff's ancient lights.

Upon the case being called on, counsel stated that the case had now been settled on terms satisfactory to both parties.

ANCIENT LIGHTS DISPUTE.

THE case of Warton *v.* Poulter, Limited, and Others, came before Mr. Justice Phillimore, sitting as Vacation Judge, on the 31st ultimo, on a motion by the plaintiff to restrain the alleged interference with his ancient lights through the erection of a wall by the defendant.

When the case was reached, counsel for the plaintiff asked that the case might be allowed to stand over for a week, the defendant undertaking in the meantime not to proceed further with the wall in question without prejudice.

His Lordship granted the application.

ALLEGED INTERFERENCE WITH ANCIENT LIGHTS.

THE case of Webster *v.* Raphael Tuck & Sons, Limited, on the 31st ult. came before Mr. Justice Phillimore, sitting as Vacation Judge, it being an application by the plaintiff to restrain the defendants from erecting a building so as to interfere with the plaintiff's ancient lights.

When the case was called on, counsel for the plaintiff asked that the motion might be allowed to stand over for a week, in order to complete an agreement for a compromise.

His Lordship acceded to the application.

MEETINGS.

WEDNESDAY, SEPTEMBER 7.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members. 8 p.m.

RECENT PATENTS:

ABSTRACTS OF ACCEPTED SPECIFICATIONS.

***Open to opposition until** October 10.*

[1897] 19,344.—REMOVAL AND PREVENTION OF SCALE AND PROTECTION FROM CORROSION ON THE INSIDE OF BOILERS; *T. & G. H. Swift.*—The composition is made of Irish moss, carbonate of potash, soft soap, tallow, (1 lb. each), Stockholm tar (2 lbs.), soda crystals (13 lbs.), and cottonseed oil (2 pints); the Irish moss is first boiled for three hours in 10 gals. of fresh water, the other ingredients are then added, and the whole is boiled down to 8 gals. Quantity, ½ pint per 1-horse power; the claim is for the action of the moss when incorporated with the other ingredients.

20,414.—GLASS TILES: *W. Thomson.*—The back or one side of the tile is coated with a mixture forming a cement or enamel composed of a solution of soluble glass mixed with an insoluble silicate or with oxide of zinc or other like base, or with both, for the purpose of forming a key for attachment.

22,090.—COMBINED WATER-CLOSET AND SINK: *J. & S. H. Dibble.*—The invention is for an improvement of their patents 18,086 and 26,102—1896, by placing a trap-door at the outlet pipe's mouth (when near or under the sink) to prevent the wind from reaching the sink. The trap-door is opened by the flow of water from the sink, and closed by its own weight. For the gulley-box of their latter specification they provide a hinge and joint, and an outside door to prevent choking of the gulley-trap by snow, &c.

22,681.—WATER SUPPLY AND DISCHARGE APPARATUS, AND OTHER PARTS OF LAVATORIES, SINKS, &C.: *J. Shanks.*—The several claims are for (*a*) a horizontal frame, fixed to a wall, and fitted with rubber studs on its inner sides for carrying the basin, which has an overflow gutter and a drainage passage, or with an outlet whose valve is moved by a lever or treadle; (*b*) attaching the supply valve apparatus to a wall-plate under the basin, fitting the supply pipes to the valve-box, communicating through separate spaces and inlet ports with a middle space connected to an inlet in the basin, the supply valves closing upwards by springs, and opening downwards by the action of foot-levers; (*c*) making the discharge outlet at the back part of the basin in a recessed space, the discharge valve being in the form of a hollow plug, and worked by treadle or other action. The improvements are adapted for hospital use, when handling of the valve-mechanism should be avoided.

22,837.—COMBINED STOPPER AND CONNECTOR FOR SEWERS, DRAINS, &C.: *E. A. Sandford Fawcett.*—The end of the branch or pipe to which a connection may have afterwards to be made is closed with a disc preferably made in one piece with the pipe or socket, a notch being

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Extension of Covered Market	Aberavon Corp.	20 guineas	Dec. 1

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Removal of Slop, &c.	Islington Vestry	The Vestry's Depot, Liverpool-road, N.	Sept. 5
Main Sewers, Coppull and Clayton-le-Woods	Chorley R.D.C.	A. Jolly, Surv. 9, High-st. Chorley	Sept 6
Belgian Granite	Diss (Norfolk) U.D.C.	Surveyor, Council Offices	do.
Road Works, Hexthorpe, Yorks	Balby-with-Hexthorpe U.D.C.	G. Gledhill, Surv. Council Offices, Balby, Doncaster	do.
Two Houses, Mapplewell, near Barnsley		R. & W. Dixon, Archt. Blackburn	do.
School Buildings, South Kirby, near Wakefield	Wesleyan Trustees	G. F. Pennington, Archt. Carlton-st. Castleford	do.
*Sewerage Works	Malling R.D.C.	Prof. H. Robinson, 13, Victoria-st. S.W.	do.
Stoneware Pipes, Gullies, &c.	Weybridge U.D.C.	J. S. Crawshaw, Surv. Council Offices	Sept. 7
Pipe Sewer, Gatehouse-road	Littleborough (Lancs.) U.D.C.	G. H. Wild, Surv. Council Offices	do.
Electric Lighting Works	King's Lynn Corp.	Prof. H. Robinson, 13, Victoria-st. S.W.	do.
Schools, Swinton	Manchester Union	A. J. Murgatroyd, 23, Strutt-st, Manchester	do.
Boundary Wall, &c. at Cemetery	Derby Corp.	J. Ward, Borough Surv. Corporation Offices	do.
Public Baths, Portobello	Edinburgh Corp.	Surveyor, Public Works Office, City Chambers.	do.
Sewer Diversion, &c.	Overton (Salop) R.D.C.	J. W. M. Smith, Borough Surv. Wrexham	Sept. 8
*Stonework	Salford Gas Comttee.	Engr. Gas Offices, Salford	do.
Drainage Works, Letterkenny, Ireland		Secretary, Board of Control, Custom House, Dublin	Sept. 9
Drainage Works at Workhouse	Newcastle-on-Tyne Union	W. H. Dunn, Archt. 5, St. Nicholas-buildings, Newcastle-on-Tyne	do.
Bridge over River Cothi, Carmarthen	Llandovery R.D.C.	M. W. Davies C.E. Gloucester-place, Swansea	do.
*Public Conveniences, &c. on Sea Front	Cromer U.D.C.	A. F. Scott, Surveyor, Cromer	Sept. 10
Paving, &c. Hopper-street West	Tynemouth Corp.	J. F. Smillie, Boro Surv. Town Hall, Tynemouth	do.
Brick Tank	Corbridge-on-Tyne Gas Co.	H. Lees, C.E. Gas Works, Hexham	do.
Paving, &c. Colliers-street	Oswaldtwistle U.D.C.	R. N. Hunter, Surv. Town Hall, Oswaldtwistle	do.
*Office Buildings	Ramsgate Corp.	W. A. M. Valon, Engr. Town Hall	do.
Chimney Shaft, &c.	Bury St. Edmund's Corp.	J. C. Smith, C.E. Town Hall	do.
Additions to Premises, Halifax	Campbell Gas Engine Co.	Jackson & Fox, Archt. 22, George-st. Halifax	do.
Pair Villas, Brook Park Estate, Sleights, Whitby		J. J. Milligan, Archt. 77, Baxtergate, Whitby	do.
Bridge Work, Sabden Brook, Whalley & Read	Lancs. C.C.	W. H. Radford, Engr. 19, Brazenose-st. Manchester	do.
*Drainage and Sanitary Works at School, Sutton	South Metro. School District Managers	M. Hooper, Surv. Sutton, Surrey	Sept 12
Stationmasters' Houses, Omagh, Trew, &c.	G. N. Ry. Co. (Ireland)	Engineer, Amiens-street Terminus, Dublin	do.
Bridge over River Kelvin	Glasgow Corp.	C. Forman, C.E. 160, Hope-street, Glasgow	do.
Slaughter Houses, &c.	Blackburn Corp.	W. Stubbs, C.E. Municipal Offices, Blackburn	do.
Relief Offices, &c. Widnes	Prescot Union	J. P. Fraser, Archt. 4, Bold-street. Warrington	do.
*300 Tons Portland Cement	Torquay Corp.	H. A. Garrett, Boro. Surv. Torquay	Sept. 13
Cast Iron Pipes, &c.	Hastings Corp.	P. H. Palmer, C.E. Town Hall	do.
Workshop, &c. Maxton	Dover T.C.	H. E. Stilgoe, C.E. Town Hall	do.
Additions, &c. to Knightstone Baths	Weston-super-Mare U.D.C.	Price & Wilde, Archt. 15, Waterloo-street, Weston-super-Mare	do.
*Underground Convenience, Old-st. City	St. Luke's Vestry	Surveyor, at Vestry Hall, City-road, E.C.	Sept. 14

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Paving Roadway	Plumstead Vestry	W. C. Gow, Surv. Vestry Hall	Sept. 14
*Demolition of Buildings and Building Walls	Greenwich B. of W.	Board's Offices, 141, Greenwich-road, S.E.	do.
*Road-making and Paving Works	do.	do.	do.
Lightkeeper's Dwellings, Termoncarragh, co. Mayo	Commrs. of Irish Lights	O. Armstrong, Irish Lights Office, Dublin	Sept. 15
*Erection of Hospital, &c. Braintree	Braintree Jat. Hospital Board	H. H. Nankivell, Surv. Braintree	Sept. 17
*School Buildings	Central London School District	Newman & Jacques, 2, Fencourt, E.C.	do.
*Buildings for Electricity Works	Gloucester Corp.	H. A. Dancey, 26, Clarence-street, Gloucester	Sept. 19
Sewerage Works, Lenton-boulevard	Nottingham Corp.	A. Brown, C.E. Guildhall Nottingham	do.
*Underground Conveniences, Queenhithe	Corp. of London	Engineer's Office, Guildhall	Sept. 20
Cemetery Chapel	Godalming Burial Bd.	Welman & Street, Archt. Church-street	do.
Technical School, &c.	Leek T.C.	W. Sugden & Sons, Archt. Leek, Staffs.	Sept. 21
*Buildings for Electric Light Station	Bury St. Edmund's Corp.	J. Campbell Smith, Boro. Surv.	Sept. 24
*Ventilating Columns and Stoneware Pipe Connexions	Beckenham U.D.C.	John A. Angell, Surv. Beckenham	Sept. 26
*Widening Roads	do.	do.	do.
Main Drainage Works, Eynsham	Witney R.D.C.	N. Lailey, C.E 16, Great George-street, S.W.	do.
*Re-building Kew Bridge & Approaches, &c.	Middlesex & Surrey C.C.	Sir J. Wolfe Barry & C. A. Brereton	Oct. 3
Additions to Workhouse	Westbury-on-Severn Union	W. F. Jones, 21, George-st. Gloucester	do.
*Water Supply, City of Belem, Para, Brazil	Brazilian Consulate		Nov. 10
Eight Houses, Troedyrhiw, Wales	E. Stephens	C. M. Davies, Archt. 112, High-st. Merthyr Tydfil	No date
*Fifty Cottage Dwellings, nr. Dartford	Greenhithe Brick and Land Co. Ld.	The Co.'s Offices, 9, Southampton-row, W.C.	do.
Chapel, Capheaton, Northumberland		Rev. J. Lewis, The Manse, Kirkwhelpington	do.
Additions to Club Premises, Rishton		Sandbach & Packer, Archt 15, Richmond-ter. Blackburn	do.
Cottage, Cosham Park, Cosham		A. H Bone, Archt. Cambridge-junc. Portsmouth	do.
Additions to Pavilion	Swansea Cricket Club	Musgrave & Peacock, Archt. 19 to 21, Metal Exchange, Swansea	do.
Schools, Trent-boulevard	West Bridgford (Notts) Sch. Bd.	F. Bail, Archt. King-st. Nottingham	do.
Four Houses Carlton, near Barnsley		J. Wilson, 17, King-street, Hoyland	do.
Warehouse, Water-lane, Bradford		R. Drake, Archt. 142, Allerton-road, Allerton, Bradford	do.
Drainage and Road Works, Maple Hayes, near Lichfield		A. O. Worthington, Archmore House, Kilin, N.B.	do.
Congregational Church, Abbeydale-rd. Sheffield		Heinsoll & Paterson, Archt. 18, Norfolk-row, Sheffield,	do.
Two Houses, Summerville Park, Seacombe		Storey & Hulme, Archt. 20 North John-st. Liverpool	do.
Additions Station Hotel, Ashton-under-Lyne		J. Eaton, Sons, & Co. Archt. Ashton-under-Lyne	do.
Town Hall	Dukinfield T.C.	do.	do.
Three Shops and Two Houses, Front-street, Stanley, Durham	T. Parker	W. Forster, Archt. Clifford-road, Stanley	do.
Additions to Factory, Kidderminster	Carpet Manufacturing Co.	J. M. Gething, Archt. Oxford-chmbrs. Kidderminster	do.
Additions to 115-117, Burley-road, Leeds	J. Perkins & Co.	F. Mitchell, Archt. Albion-street, Leeds	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in.
*Building Inspector	Enfield U.D.C.	150*l.*	Sept. 6
*Instructor in Building Construction	Sch. Bd. for London	6*s.* per evening of 2 hours	Sept. 10
*Electrical Engineer	Willesden D.C.	400*l.* &c.	Sept. 20

Those marked with an asterisk (*) are advertised in this Number. ***Competitions,*** *p.* iv. ***Contracts, pp.*** iv. vi. & viii. ***Public Appointments, pp.*** xvii. & xix.

formed around the disc so that it may be readily broken off, leaving the pipe or socket intact. If the pipes are to be salt-glazed, a hole should be made in the disc for circulation of the fumes; after firing, the hole is closed by cementing a stopper in it.

23,378.—ROOFING TILES AND APPARATUS THEREFOR: *R. Walker.*—To the moulding machine is fitted a further moulding apparatus for pressing into the moulded tile's upper surface, near to its upper edges, where it will be overlapped and will thus form a channel to stop the water from being driven through the tiles. The latter apparatus, when in its normal position with the bevelled edges of the moulding box, forms a space filled with material and a tool drawn along parallel to the bevel, thus raising a moulding or projection upon the tile; the roofing tiles are strengthened with metal pieces at the hanging nib necks and around the nail-holes, and are fashioned with a loop or eye on the underside for attachment.

[1898] 1,087.—KILNS FOR BAKING BRICKS, POTTERY, CEMENT, &C.: *H. Beyer & F. Recke.*—The gases are led in a spiral manner through the kiln; this is effected by providing it with a central column and with a smaller laterally situated pillar, both having obliquely ascending passages within them; the materials to be baked are arranged in layers of spiral form around the central column (which also forms the chimney), spaces being left between for passage of the gases of combustion.

1,326.—HOLDERS FOR SLIDING WINDOW-SASHES: *T. King.*—A steel blade-spring is attached by rivets or screws to a metal plate which is fastened to the frame or sash; a spiral spring may be adopted to render the break stronger and more durable.

5,762.—FILES: *J. Russell.*—The novelty (which is claimed to be specially advantageous for files for filing brass and its alloys) lies in cutting one set of teeth obliquely across the file in the usual way, and making the crosscuts also oblique in the opposite direction but at a much greater distance apart than has been customary—for example, two cuts of ordinary width may be omitted after cutting the first tooth and then the second may be cut, thus giving four cuts of teeth in lieu of the common ten.

6,308.—CAST AND DRAWN LEAD TRAPS: *R. G. L. Burn.*—The invention relates to lead traps which have a branch inlet pipe to receive overflow water from lavatories, sinks, or baths, and its object is to remedy defects ascribed to the practice of soldering an overflow pipe into the inlet of the trap. In a drawn lead trap is cut an opening into the back of the trap, close to the bottom of the U-shaped portion containing the water, and a piece of lead pipe is connected thereto at an angle of about 45 deg. to the vertical inlet pipe by means of a burned lead joint; as the pipe enters the trap directly opposite the outlet, the flow of water to the waste pipe is not impeded. In the case of a cast lead trap the overflow pipe may be cast in one piece with the trap.

9,820.—WINDOWS: *A. Hawley.*—The stiles of each sash are divided vertically, their outer portions being arranged to slide with grooves in the frame, whilst the two portions of each stile are pivotted together, the arrangement being such that the glazed portions of the sashes can be caused to slide vertically, no matter whether the glazed portions be in a vertical or a practically horizontal position. The invention is devised for an improvement upon the inventor's letters patent 13,068—1895.

11,790.—FOR UTILISING WATER PRESSURE IN PIPES FOR HOUSEHOLD PURPOSES: *F. Berardi.*—The motor consists of a wheel having light blades or paddles bent to an angle, upon which is delivered a jet, under pressure, on its way to the ordinary house service; provision is made for rendering the latter independent of the motor, and for working the motor either continuously or only when the water is drawn off for domestic purposes.

14,595.—THE COVERING AND PRESERVATION FROM RUST OF EXPOSED IRONWORK: *K. B. Skeet.*—The process consists of applying to the iron surface (freed from rust) a coat of best coal tar put on with a brush or pad and well rubbed in, whereupon is immediately sprinkled a special dry powdered substance in the form of a peculiar kind of carbon, a by-product, and obtained from the accumulation of the burnt or partially-burnt coal dust and smoky deposits in the smoke boxes of marine and other engines.

NEW APPLICATIONS.

August 15—20.

17,531, F. W. Barratt, 17,612, Gilletts, 17,718 and 17,922, Ford-Lloyd & Mondey, 17,800, J. R. Bell, 17,840, T. Thorp, 17,920, A. L. Buffington, 17,956, Melhuish & Temple, and 17,963, Macé & de Burgue, Acetylene Gas. 17,537, G. Alexander, Adjustable Grip Blind Roller. 17,538, H. Beech, Flow of Water or other Fluid by the Fusion of a Joint or Connexion. 17,556, Aspinalls, Safety Gear for Colliery Cages and other Hoists or Lifts. 17,576, R. Roderwald, Joining Metallic Tubes. 17,583, Bugg & Darling, and 17,588, V. Busson, Electrical Batteries. 17,586, J. Jones, Man-holes and Covers. 17,587, L. S. Buffington, Miners' Lamps. 17,590, W. Rowe, Window, Cupboard, and other Fasteners. 17,591, Compagnie de l'Industrie Electrique, 17,601, C. Oliver, 17,692, O. von Mülmann, and 17,883, F. Booker, Electrical Arc Lamps. 17,592, Bugg & Darling, Portable Electric Lamps. 17,596, A. Beeri, Fastening Device for Windows, Fanlights, &c. 17,598, Hunt & Riley, Oil Stoves and Furnaces. 17,608, W. H. Sherburn, Stoves for use with Oil and other Lamps. 17,614, E. L. Pease, "Structural Arrangements in a Manner Applicable to Roofing and the like Structural Purposes." 17,615, T. Duncan, Circular Saw Guard. 17,629, P. H. Bertrand, Gas Cooking Stove Apparatus. 17,630, W. Oxley, Cramps for Picture Frames, &c. 17,633, W. Hall, Spirit Levels. 17,635, R. Edbrooke, Casement Fasteners. 17,647 F. G. Baily, Electrical Switches, Plugs, &c. 17,657 Medbery and Others, Pipe or Conduit Couplings. 17,659, E. Bergmann, and 17,764, Reason and Others, Electrical Meters. 17,660, C. Rotru, Safety Bolt or Latch for Doors and Windows. 17,663, A. Kesson, Brickmaking Machinery. 17,682, N. J. Carey, Heat Generators. 17,691, L. E. C. Lelu, Water-closets. 17 696, J. C. Swan, Kilns for Cement-making Materials, &c. 17,700, C. F. P. Stendebach, Automatical Gas Igniter. 17,706, B. F. Aiken, Combined Burner and Scraper for Removing Paint and Varnish. 17,721, J. Duckett & Son and Others, Slop Water-closets. 17,743, Yeadon & Rider, Fireplace Cinder Sifters. 17,746, G. C. Berry, Self-locking Sash Fastener. 17,758, W. P. Preble, Antomatical Lathes or Machines for Turning or Shaping Wood and other Materials. 17,759, B. L. E. Moustier, Crushing and Pulverising Apparatus. 17,762, H. Wollheim, Ornamental Veneers. 17,763, A. G. D. Moger, Crushing Mills. 17,769, M. Dubrot, Electrical Accumulators. 17,774, C. F. Roberts, Syphon Flush-cisterns. 17,787, A. L. Dunbar, Benches for Joinery and other Wood Working. 17,792, J. Carr,

Ventilators. 17,802, H. Whiteley, Sliding Partitions, Doors, Windows, &c. 17,817, C. P. Kirsten, for Signalling Deficient Flow of Water and Increase of Temperature in Liquids Flowing through Tubes, &c. 17,822, L. de L. Wells, Pumps. 17,825, G. Little, Gas-retort Settings. 17,844, W. H. Corlyon, Holder for Clasping Stair Carpets, Rods, Window-curtains, Laths, &c. 17,853, Stevenson & Evans, Checkering Bricks for Hot-Blast Stoves. 17,859, T. R. Blackmore, White-lead Colour Mixer or General Oil and Water Colour Mixer. 17,870, H. G. T. Glazebrook, Apparatus for Giving Assistance in Reproducing Drawings. 17,879, M. J. Davidsen, Mills for Mixing Cements, &c. 17,899, S. P. Hyatt, Glazing Windows. 17,918, L. Stork, Automatical Ball-cocks or Valves. 17,933, T. C. Fawcett, for Feeding Duplex Brick-making Machines. 17,941, F. Hancock, Pottery from Plaster Moulds and Applied Mechanism. 17,950, J. H. Wilson, Safety-locks, and their Electrical Appliances. 17,951, G. Hodgkinson, Glazing Roofs and Similar Parts of Buildings. 17,970, F. Brunt, Friction-clutches. 17,973, C. E. S. Phillips, Induction Coils or Transformers. 17,980, British Non-flammable Wood Co., and Another, Wood-drying. 17,981, C. T. Porter, Gearing, Lathes, and boring-mills. 17,986, C. Twer, Wrought-iron Gas-pipes, and their Manufacture.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

August 10.—By J. FRANCIS (at Tenby).

St. Mary-out-Liberty, Pembroke. — Knightson Lake Farm, 10 a. 3 r. 1 p., f.	£625
Moysland Farm, 40 a. 0 r. 12 p., f.	1,300
Rumbley Farm, 23 a. 0 r. 28 p., f.	1,250
A house, smithy, and 0 a. 0 r. 37 p., f.	180
Enclosures of land, 2 a. 3 r. 35 p.	140
Fifteen plots of building land, f.	200
Farm buildings and 20 a. 2 r. 1 p., f.	1,000
St. Mary-in-Liberty, Pembroke.—1, 2, and 4 to 8, The Green, and the "Evergreen Inn," u.t. 17 yrs., g.r. 8*l.* 4s., r. 63*l.* 10s.	660
"The Three Bells Inn" and Myrtle Grove Cottage, 3 a. 2 r. 3 p., u.t. 17 yrs., g.r. 3*l.* 1s.	385

August 11.—By BATCHELAR & SON (at Croydon).

Croydon.—South End, a building site, nearly 10,000 ft., f.	1,350
Morland-road, Burnham, f.	860

August 13.—HEWETT & LEE (at Guildford).

Guildford.—149, High-st., and the Constitutional Hall adjoining, f., r. 155*l.*	2,750

August 16.—By MORRIS, MARSHALL, & POOLE (at Newtown).

Dolfor, Montgomery.—Brook House and 7 a., f.	300
Kerry, Montgomery.—Caellanny and 61 a. 3 r. 10 p., f.	1,000
Llanmerewig, Montgomery.—The Llanmerewig Smithy and 2 a. 3 r. 16 p., f.	275

By POOLER & DAVIES (at Newport).

Great Chatwell, Stafford.—Great Chatwell House Estate, 167 a., f.	7,450

August 19.—By CHADWICK & SONS.

Lincoln's Inn Fields.—15, Sardinia-st., and 26 and 28, Vere-st., area 3,070 ft., f.	4,025
Kensington.—2½, Bedford-gdns., u.t. 25 yrs., g.r. 8*l.* 8s., r. 32*l.* 10s.	320

By MORRIS, MARSHALL, & POOLE (at Welshpool).

Hirnant, Montgomery.—Bwlch-Sych Farm, 164 a. 1 r. 30 p., f.	700
Llanerfyl, Montgomery.—Enclosures of land, 7 a. 0 r. 17 p., f.	165
Maes Celynog Farm, 116 a. 1 r. 0 p., f.	1,100
Lawnt-y-Gwernydd Farm, 213 a. 3 r. 1 p., f.	1,100
Tangewst Farm, 130 a. 1 r. 27 p., f.	600
Pen-y-foel Farm, 49 a. 2 r. 13 p., f.	475
Llanrhaidy, Montgomery.—Nant-y-wern Farm, 48 a. 2 r. 38 p., f.	675

August 20.—By HEWETT & LEE (at Guildford).

Woking, Surrey.—Wych-st., Combes Close, 1 a. 3 r. 31 p., f.	500
Goldsworth-rd., Watt's Field, 10 a. 1 r. 11 p., f.	1,150
Knaphill, Long Lanes Farm, 35 a. 2 r. 20 p., f.	1,000

By E. G. GILDERS (at Clacton).

Clacton-on-Sea, Essex.—Collingwood-rd., a plot of land, f.	140
Freeland-rd., thirty plots of land, f.	5,131
Marine Parade West, seven plots of land, f.	3,190
Nelson-rd., twelve plots of land, f.	1,800
St. Vincent-rd., eleven plots of land, f.	1,565
Trafalgar-rd., nine plots of land, f.	1,495
Wash-lane, a plot of land, f.	150

August 23.—By WINCH & SONS (at Ashford).

Biddenden, Kent.—Elmstone Farm, 40 a. 1 r. 32 p., f.	700
Hare Plain Farm, 65 a. 2 r. 3 p., f.	1,320
The Iden Lands, 48 a. 1 r. 30 p., f.	740
Swarden, Kent.—Cousin's Farm, 49 a. 3 r. 20 p., f.	350
Dodge's Farm, 31 a. 2 r. 33 p., f.	540
Munks and Wash-house Farms, 207 a. 1 r. 34 p., f.	2,350
The Headcorn Fields, 12 a. 2 r. 23 p., f.	140
Warehorne, Kent.—Part of Little Hatch Farm, 36 a. 1 r. 4 p., f.	360
Woodchurch, Kent.—Highland Farm, 58 a. 2 r. 29 p., f.	580
Susan Hill Farm, 89 a. 3 r. 21 p., f.	1,050

August 24.—By G. BRINSLEY.

Chiswick.—48, 50, and 52, Glebe-st., u.t. 71 yrs., g.r. 8*l.*, r. 82*l.*	655
33, 35, and 37, Binns-rd., u.t. 71 yrs., g.r. 12*l.*, r. 80*l.* 12s.	540
33 to 47, Reckitt-rd., u.t. 71 yrs., g.r. 32*l.*	1,330
29, 31, 43, 45, and 47, Quick-rd., u.t. 71 yrs., g.r. 22*l.* 10s.	825
18 to 24 (even), Quick-rd., u.t. 70 yrs., g.r. 18*l.*	625
26 to 34 (even), Quick-rd., u.t. 70 yrs., g.r. 22*l.* 10s.	770

By E. W. RICHARDSON & SON.

South Hackney.—Brookfield-rd., f.g.r. of 42*l.*, reversion in 79 yrs.	1,165
New Southgate.—Springfield-rd., f.g.r. of 15*l.*, reversion in 83 yrs.	420

By J. SUTTON ABBOTT.

Wanstead.—1, Heathfield, f., r. 28*l.*	370
Tavistock-rd., a plot of land, f.	110

By R. DONKIN & SON (at Newcastle).

Bamburgh, Northumberland.—The Twizell House Estate, 790 a., f.	25,800

By A. DOWELL (at Edinburgh).

Northmavine, Shetland.—The Lands of North Roe, 6,000 a.	4,320

By H. DUKE & SON (at Bridport).

Shipton Gore, Dorset.—St. Luke's Farm, 40 a. 3 r. 15 p., f.	£1,000
Upper Loders, Dorset.—Enclosures of land, 11 a. 1 r. 20 p., f.	420

By MORRIS, MARSHALL, & POOLE (at Newtown).

Newtown, Montgomery.—The Bank and the Bank House, f.	1,587
4, 5, and 6, Bridge-st., f., r. 44*l.*	990
11 to 15, Severn-st., with three cottages and laundry premises in Parker's-lane, f., r. 98*l.* 16s.	2,015
34, Park-st., f., r. 10*l.* 10s.	130
Llanllwchairn, Montgomery.—Llwynderw Farm, 53 a. 1 r. 2 p., f.	1,500

By G. E. SWORDER & SONS (at Royston).

Reed, Herts.—Reed Hall Farm, 127 a. 3 r. 25 p., f.	2,550
Enclosures of land, 21 a. 3 r. 15 p., f.	430
Five freehold cottages and 1 a. 3 r. 21 p., f.	330
Barley, Herts.—Shaftesbury End Farm, 33 a. 1 r. 28 p., f. and c.	400
Three Cottages and 0 a. 2 r. 18 p., f. and c.	160
Three enclosures of land, 8 a. 1 r. 21 p., f. and c.	285

August 25.—By HAWES & CO.

Wimbledon.—1, Raynes Park-ter., u.t. 87 yrs., g.r. 13*l.*	600

By JOSEPH HIBBARD & SONS.

Harringay.—132 and 134, Albion-rd., u.t. 96 yrs., g.r. 6*l.*, r. 60*l.*	320

By NEWBON, EDWARDS, & SHEPHARD.

Wandsworth. — Westbourne-ter., f.g.r. of 21*l.*, reversion in 84 yrs.	320
Caledonian-rd.—60, Pembroke-st., u.t. 51 yrs., g.r. 4*l.* 4s., r. 27*l.*	685
27, Pembroke-st., u.t. 51 yrs., g.r. 5*l.* 5s., r. 32*l.* 10s.	330
10 and 12, Delhi-st., u.t. 60 yrs., g.r. 12*l.*, r. 69*l.* 17s. 6d.	800
25 and 27, Freeling-st., u.t. 46 yrs., g.r. 20*l.*, e.r. 56*l.*	520
East Finchley.—Bedford-rd., Fairview and Durham Villa, f.	435

By F. J. STAINES.

Clapton.—1 to 11, Florence-ter., u.t. 86 yrs., g.r. 66*l.*	2,800
Hackney.—127, Victoria Park-rd., u.t. 44 yrs., g.r. 6*l.*, r. 50*l.*	400
317, Victoria Park-rd., u.t. 40 yrs., g.r. 5*l.* 5s., r. 30*l.*	300
80 and 82, Loddiges-rd., u.t. 49 yrs., g.r. 7*l.*	200
Upton Park.—36, 38, and 40, Jephson-rd., u.t. 85 yrs., g.r. 12*l.*	980

By STIMSON & SONS.

Abbey Wood, Kent.—Dar-el-Saleam and 3 a., f.	700
Peckham.—64 and 66, Grenard-rd., u.t. 66 yrs., g.r. 10*l.*	275
Bermondsey.—1, 3, 5, and 7, Anchor-st., u.t. 58 yrs., g.r. 16*l.*	1,510
East Ham.—18, Colvin-rd., f.	365
Chelsea.—Bywater-st., i.g.r. of 56*l.*, u.t. 10 yrs., gr. 24*l.* 11s. 4d.	
Old Charlton, Kent.—1 to 7 (odd), Inverine-rd., u.t. 91 yrs., g.r. 18*l.*	
Catford.—Jutland-rd., f.g.r. of 27*l.*, reversion in 99 yrs.	
Croydon.—9, Macaulay-ter., u.t. 97 yrs., g.r. 4*l.* 10s., r. 28*l.*	

By THORNE & SON.

August 26.—By MCINTOSH & CO.

Bermondsey.—99 to 102, George-row, u.t. 17 yrs., g.r. 20*l.*	

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G.	ton	8/0/0 0/0/0
Teak, E.I.	load	9/5/0 14/5/0
Sequoia, U.S.ft.cu.		1/9/0 2/0/0
Ash, Canada, load		3/18/0 5/3/0
Birch, do.		3/7/6 5/0/0
Elm, do.		4/13/0 5/13/0
Fir, Dantsic, &c..		2/9/0 4/9/0
Oak, do.		1/18/0 2/18/0
Canada		2/13/0 4/18/0
Pine, Canada red		0/0/0 0/0/0
Do. yellow		4/3/0 6/3/0
Lath, Dantsic, fath		4/10/0 5/10/0
St. Petersburg..		5/0/0 6/10/0
Wainscot, Riga, &c., log		4/10/0 6/0/0
Odessa, crown		4/10/0 6/0/0
Deals, Finland		
2nd & 1st std	100	9/0/0 9/10/0
Do. 4th & 3rd ..		9/0/0 9/10/0
Do. Riga		7/10/0 8/10/0
St. Petersburg, 1st yellow		11/0/0 13/10/0
Do. 2nd yellow.		10/0/0 11/10/0
Do. white		9/0/0 11/0/0
Swedish		9/10/0 16/0/0
White Sea		10/10/0 17/0/0
Canada, Pine 1st		18/0/0 24/10/0
Do. do. 2nd		13/0/0 15/15/0
Do. do. 3rd, &c.		6/0/0 9/10/0
Do. Spruce, 1st		8/10/0 10/10/0
Do. do. 3rd and 2nd		7/10/0 8/10/0
New Brunswick		7/0/0 8/0/0
Battens all kinds		5/0/0 16/0/0
Flooring boards, sq., 1 in. prep. 1st		9/6 16/0
Do. 2nd		8/0 13/0
Other qualities—		6/3 7/0
Cedar, Cuba, ft.		/4 /4½
Honduras, &c.		/3½ /4½
Mahogany, Cuba		/5½ /7
St. Domingo, cargo av.		/5 0/3/3
Mexican, do. do.		/3½ /4
Tobasco, do. do.		/4 /6½
Honduras, do.		/4 /6
Box, Turkey, ton		4/0/0 15/0/0
Rose, Rio		7/0/0 14/0/0
Bahia		6/0 0 12/0/0
Satin, St. Doming.		0/0/5 0/1/0

TIMBER *(continued)*.		
Satin, Porto Rico		0/0/6 0/1/6
Walnut, Italian ..		0/0/3 0/0/7
METALS.		
Iron—Pig, in Scotland	ton	2/7/2½ 0/0/0
Bar, Welsh, in London		5/15/0 5/17/6
Do. do. at works in Wales		5/10/0 5/12/6
Do. Staffordshire, in London		6/5/0 7/10/0
COPPER—British cake and ingot		55/5/0 55/15/0
Best selected ..		55/15/0 56/5/0
Sheets, strong..		61/0/0 61/10/0
Chili bars		51/15/0 0/0/0
YELLOW M. L.	lb.	5d. 5¼d.
LEAD—Pig		
Spanish	ton	13/0/0 0/0/0
English com. bands		13/5/0 0/0/0
Sheet, English 6 lbs. per sq. ft. and upwards ..		14/5/0 0/0/0
Pipe		14/15/0 0/0/0
ZINC—English sheet	ton	23/0/0 0/0/0
Vieille Montagne		23/10/0 0/0/0
Spelter		20/12/6 20/15/0
TIN—Straits		72/8/9 0/0/0
Australian		73/3/6 73/12/0
English Ingots..		75/10/0 76/10/0
Banca		0/0/0 0/0/0
Billiton		/0/0 0/0/0
OILS.		
Linseed	ton	16/17/6 0/0/0
Cocoanut, Cochin		27/15/0 0/0/0
Do. Ceylon		29/0/0 0/0/0
Palm, Lagos		21/15/0 0/0/0
Rapeseed, English pale		27/10/0 0/0/0
Do. Brown		26/0/0 0/0/0
Cottonseed ref. ..		14/5/0 15/5/0
Oleine		13/10/0 14/10/0
Lubricating U.S.		0/5/3 0/7/6
Do. Black		0/5/0 0/6/6
TAR—Stockholm	barrel	1/3/0 0/0/0
Archangel		0/12/6 0/0/0
Turpentine		22/12/6 0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100 unless in some exceptional cases and for special reasons.]

AYLESBURY (Bucks).—For alterations and repairs to Walton Villas, Aylesbury, for Mr. T. Horwood. Mr. Ernest Hazell, architect, 23, Moorgate-street, E.C.:—

Seth Grist, Limited	£1,078	S. Mayne & Son	£1,024
J. S. Holland	1,091	Webster & Cannon*	984

* Accepted.

BRENTWOOD.—For re-flooring the boys' playroom at Hackney Schools, Brentwood, Essex, for the Guardians of the Hackney Union. Mr. W. A. Finch, architect, 76, Finsbury-pavement, E.C.:—

Barrett & Power, Hackney*	£179	S. R. Lamble†	£167

* Accepted. † Amended, £210.

BURNLEY.—For additions to the workhouse, for the Union Guardians. Mr. S. Keighley, architect, Nicholas-street, Burnley. Quantities by the architect:—

Masonry and Bricklaying.—Smith Bros., Burnley	£9,940
Joinery.—Nuttall & Whittaker, Burnley	2,139
Slating.—William Staworth, Burnley	497
Concrete.—Phœnix Fireproof Company, Manchester	1,125
Plumbing.—George E. Whitehead, Burnley	1,434
Plastering.—J. Laycock, Colne	544
Painting.—Jas. Holt, Burnley	210

HONITON.—For erecting a new bank for the Devon and Cornwall Banking Company, at Honiton, Devon. Messrs. Ralling & Tonar, architects, Bedford-circus, Exeter:—

Williams	£3,400	Nix	£2,953
Brown	3,173	Turner	2,907
Bird & Pippard	3,120	J. W. & H. Childs, Yeovil,*	2,879
Wallbridge	3,065		

* Accepted.

HULL.—For the erection of stabling and workshops, for Mr. C. Roemer, Hull. Mr. E. Whitlock, architect, 26, Scale-lane, Hull. Quantities by the architect:—

Bricklaying.—J. Stephenson, 66, Durham-street	£105	4	6
Joinery.—Jones & Sanderson, Craven-street	34	0	0
Slating.—Mark Woodcock, 25, Stanley-street	23	9	6
Plumbing.—H. Halmshaw, 82, Cogan-street	11	4	0
Masonry.—Wrigglesworth, 161, Walton-street	9	19	6
Painting.—R. Monaghan, Barmston-street	8	15	0

KINGSTON-ON-THAMES.—For erecting new offices and disinfecting chambers, for the Guardians of the Kingston Union. Mr. Wm. H. Hope, architect, Portsmouth-road, Kingston-on-Thames:—

	Offices.	Disinfecting Chambers.
H. J. Shelley	£6,447	£382 12 6
J. H. Jarvis	6,355	—
J. W. Brooking	6,354	358 0 0
Dockerill & Sons	6,326	348 12 4
Speechley & Smith	6,289	354 0 0
General Builders, Limited	6,260	338 13 7
McCarthy E. Fitt	6,077	348 0 0
Wm. C. Cheshire	6,046	350 0 0
Merredew & Wort	5,899	331 0 0

LANCASTER. — For additions, &c., to Wilson's Endowed Schools, Over-Kellet. Mr. J. Parkinson, architect, 67, Church-street, Lancaster:—

Masonry.—R. T. Constable, Carnforth	£269 0 0
Joinery.—Wm. Brearey, Carnforth	142 11 6
Plumbing.—Billington & Son, Carnforth	26 0 0
Slating.—Hall & Son, Lancaster	68 0 0

LONDON.—For work at the "Neil Gwynne," Strand. Mr. Horace Wakeley, architect:—

Lane	£197 0 0	Leman	£183 11 6
Learman	187 0 0	A. Bush	180 0 0

LONDON.—For alterations to heating apparatus at Hackney Union Infirmary, Homerton, N.E., for the Guardians of the Hackney Union. Mr. W. A. Flinch, architect, 76, Finsbury-pavement, E.C.:—

W. J. Fraser & Co., Commercial-road	£391

LONDON.—For the erection of warehouse and offices, Nos. 59, West India Dock-road, and 2, Pennyfields, E., for Messrs. T. Westhorp & Co. Mr. W. A. Finch, architect, 76, Finsbury-pavement, E.C.:—

W. Silk & Son	£2,437	Killby & Gayford	£1,992
Barrett & Power	2,117	J. H. Johnson, Limehouse (accepted)	1,725
S. R. Lamble	2,001		

LONDON.—Accepted for erecting ladies' cloak-room and lavatory on the recreation ground, Earlam Grove House, for Wood Green District Council. Mr. J. Gunyon, engineer:—

Jas. Pavey, Wood Green	£220

LONDON.—For alterations at No. 11, Westbourne-grove, W., for Mr. Nathaniel Abrahams. Messrs. Clark & Hutchinson, architects, 28, John-street, Bedford-row, W.C.:—

A. P. Mitchell	£553	E. Sandon	£485
Robert Smith*	487		

* Accepted.

LONDON.—Accepted for works at the "Blenheim," Cale-street, Chelsea, for the New Westminster Brewery Company. Mr. H. W. Budd, architect, 76, Vincent-square, S.W.:—

Fittings and Fixtures.—Drew & Cadman	£832 0
Gasfittings.—Buckley & Beach	142 18
Pewtering.—Buckley & Beach	134 18

LONDON.—For new billiard-room, and alterations to "The Dartmouth Arms," York Rise, Highgate-road, N.W., for Mr. Greenslade. Mr. A. J. Perriam, architect, 43, Cannon-street, E.C.:—

Antill & Co.	£1,500	Gould & Brand	£1,262
Eddie	1,380	Marchant & Hirst	1,197
Stone	1,323		

LONDON.—For new billiard-room and alterations to "The Oxford Tavern," Kentish Town-road, N.W. Mr. A. J. Perriam, architect, 43, Cannon-street, E.C.:—

		Alternative less.
Gould & Brand	£1,993	£125
Bloomfield & Evans	1,982	50
W. Green	1,935	90
Rhodes	1,900	70
Green & Smith	1,860	80
Marchant & Hirst	1,695	67
Edwards & Medway*	1,622	72

* Accepted.

LONDON.—For alterations and additions to laundry, 106, Greenanes, N., for Mr. Roylance. Mr. A. J. Perriam, architect, 43, Cannon-street, E.C.:—

Rhodes	£257	W. Green	£170
Bloomfield & Evans	180		

LONDON.—For alterations and repairs to No. 81, South Audley-street, Piccadilly, W., for Mr. W. Tebb. Mr. P. A. Todd, architect:—

W. H. Kelland	£780	R. S. Buckeridge	£693
Spiers & Son	719		

LONDON.—For erecting new school buildings for St. John's, Bethnal-green, E., for the Rev. E. R. Hollings. Mr. A. Cox, architect, 37, Baker-street, W. Quantities by Mr. E. Clarke, 35, Vaughan-road, Camberwell, S.E.:—

McCormick & Sons	£6,830	Shurmur	£6,665
Chessum & Son	6,829	Harris & Wardrop	6,537
Knight & Son	6,784	H. Wall & Co.	6,488
Outhwaite & Son	6,679		

LONDONDERRY.—Accepted for the erection of new club-house at Quay, for the Trustees of Foyle Rowing Club. Mr. J. P. M'Grath, C.E., architect, Commercial-buildings, Foyle-street, Derry:—

Joseph Ballintine, Londonderry £500

[The lowest of four tenders]

NAZING.—For the erection of a villa residence at Old House Farm, Nazing, Essex, for Mr. John A. Rufus. Mr. J. Williams Dunford, architect, 101C, Queen Victoria-street, E.C.:—

Lawrence	£1,258	Fuller	£965
Matthews	1,133	Merridew & Wort	924
Burrage	1,036	Winch*	830
Hampton	970		

* Accepted.

NEWPORT (Mon.).—For the rebuilding of Central Schools, Powells-place, for the School Board. Messrs. Morgan & Hodge, architects and surveyors, Prudential-buildings, Newport.:—

T. G. Diamond	£2,885	E. Richards	£2,472
Jno. Moore	2,845	J. Phillips & Sons	2,467
Jno. Linton	2,725	C. H. Reed	2,400
Smith Bros.	2,664	Jas. Davies	2,359
E. C. Jordan	2,622	Tom Westacott	2,393
W. A. Linton	2,600	D. Jones	2,340
Wm. Moore	2,590	J. T. Morris*	2,300
J. Charles	2,541		

* Accepted.

NEWSTEAD (Notts).—For the erection of Wesleyan Chapel and boundary walls. Mr. J. E. Goodacre, architect, Stockwell Gate, Mansfield:—

Greenwood	£1,600 0	Pogson & Tate	£1,359 3
J. F. Price	1,572 18	Thomason	1,350 0
Gilbert & Gabbetas	1,470 0	Fisher Bros.	1,336 0
Wm. Rigley	1,402 0	W. Bains, East Kirkby*	1,338 6

* Deducting class rooms; accepted at £1,219 8s.

NORTHWOOD (Middlesex).—For the erection of a house, for Mr. Sumpter. Mr. W. A. Aickman, architect, 34, Gresham-street, E.C.:—

F. Hill	£874	C. Eames, Watford*	£829

* Accepted.

PLYMOUTH.—For the rebuilding of a store at the rear of George-street, for Messrs. Hicks & Co. Messrs. Keats & Coath Adams, architects:—

Griffin	£749 19	Goad & Co.	£700 0
Andrews	735 0	Lethbridge & Sons*	645 0
Pearn & Son	715 0		

* Accepted.

(All of Plymouth)

PRESTON (Lancs).—For additions to workhouse, Fulwood, for the Union Guardians. Mr. Whitwell, Engineer, Union Offices, Preston:—

Contract No. 1.—Buildings.

Wm. Hothersall	£1,799 0 0	J. Cartmell & Son	£1,537 0 0
Topping Brothers	1,670 0 0	M. Shorrock, Preston (accepted)	1,522 0 0
Fazackerley	1,627 6 11		

Contract No. 2.—Heating and Ventilating.

B. D. Holmes	£650 0 0	Dawson & Co., Ltd.	£435 0 0
Darque, Griffiths, & Co.	487 11 0	C. Seward & Co., Preston (accepted)	422 0 0

SOUTHAMPTON.—For the execution of private street works, Regent's Park-road, &c., for the Corporation. Mr. W. B. G. Bennett, Borough Engineer, Municipal Offices, Southampton:—

Regent's Park-road.

W. H. Bull	£3,488 0 0	F. Osman, Southampton*	£3,275 0 0
S. Nichols	3,313 0 0		

Berrywood Estate.

S. Nichols	£1,722 7 9	F. Osman, Southampton*	£1,614 0 0
H. W. Bull	1,686 0 0		

* Accepted.

STROOD (Kent).—For the erection of an assembly hall, Cliffe-road, for the trustees of Strood Wesleyan Church. Messrs. J. W. Nash & Son, architects, Rochester. Quantities by the architects:—

H. E. Whittell	£1,532 4 6	E. W. Filley	£1,425 0 0
E. D. Seagars	1,460 0 0	H. E. Phillips	1,405 0 0
J. Wilford	1,454 0 0	J. L. Trueman	1,357 0 0
C. E. Skinner	1,432 0 0	H. Wyles, Chatham*	1,250 0 0

* Accepted.

SWINDON.—For the erection of a shop, house, dairy, &c., Radnor-street, for Mr. A. C. Buckeldee. Mr. R. J. Beswick, architect, 9, Regent-street, New Swindon:—

C. Williams	£1,499	W. Chambers	£1,105
J. Williams	1,467	Ball & Kilminster, Kent-road, Swindon (accepted)	1,073
R. Payne	1,325		

THEYDON BOIS.—Accepted for the erection of dairy, &c., at "Purlieu," Theydon Bois, Essex, for Mr. E. A. King. Mr. W. A. Finch, architect, 76, Finsbury-pavement, E.C.:—

S. R. Lamble, Kentish Town £295

WALTHAMSTOW.—For alterations and additions at the Victoria Hall, Hoe-street, Walthamstow, and building new Empress Theatre adjoining, for Messrs. Charles O'Malley and Warwick Buckland. Mr. Bertie Crewe, architect, Savoy Mansions, Savoy. Quantities by Mr. Harry E. Pollard, 6, York-buildings, Adelphi:—

Dearing & Son	£17,366	Johnson & Co.	£16,690
Patman & Fotheringham	17,085	Bateman	15,997
Killby & Gayford	16,950	Grav, Hill, & Co.	15,950
Knight & Son	16,813	W. Pattinson & Son	15,743

WANSFORD.—For additions, &c., to a house, for the Wansford-in-England Lodge of Oddfellows. Mr. J. C. Traylen, architect, No. 16, Broad-street, Stamford:—

L. C. Gilbert	£225
Coates & Son, Thrapston (accepted)	210

WHITCHURCH (Devon).—For the erection of greenhouses at "Hollybank," the residence of Mr. Edmund Coppin. Messrs. Keats & Coath Adams, architects:—

H. B. Fuge, Horrabridge £300

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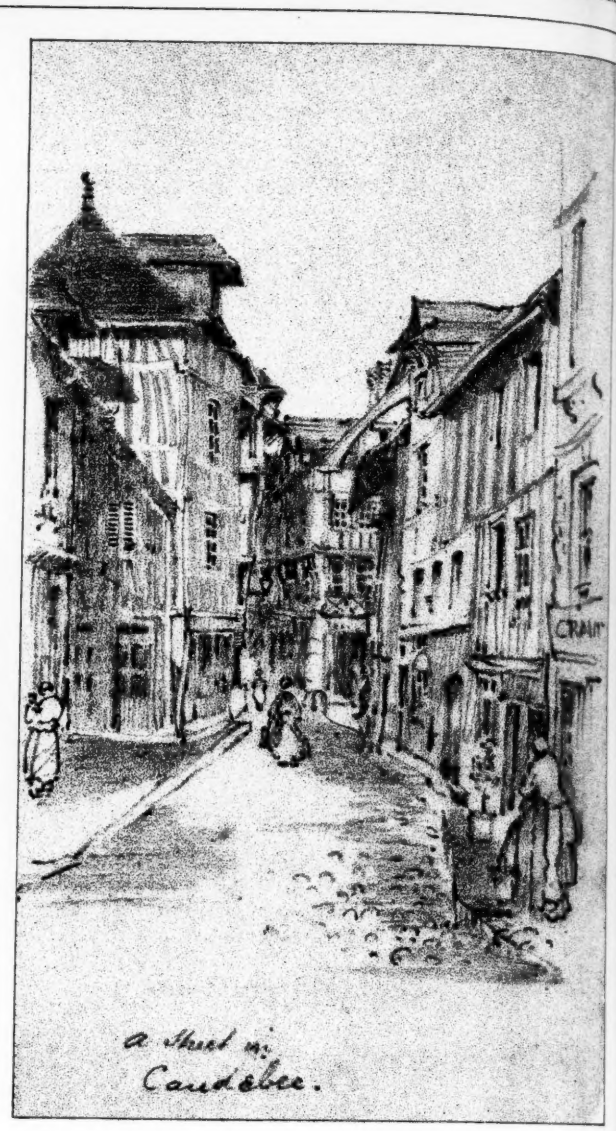
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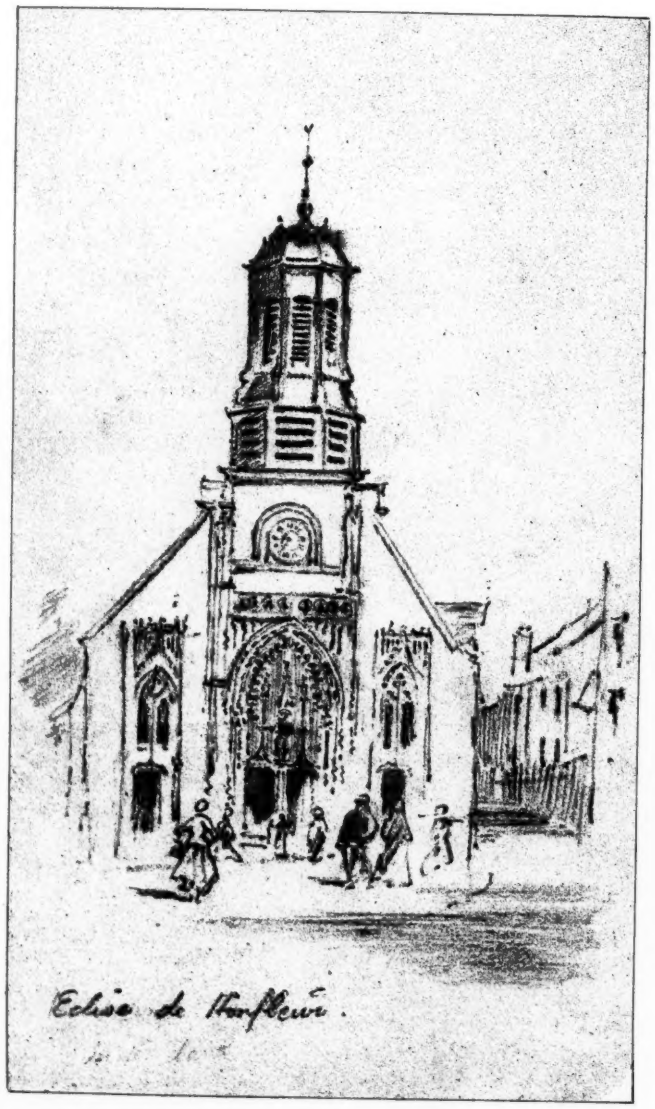
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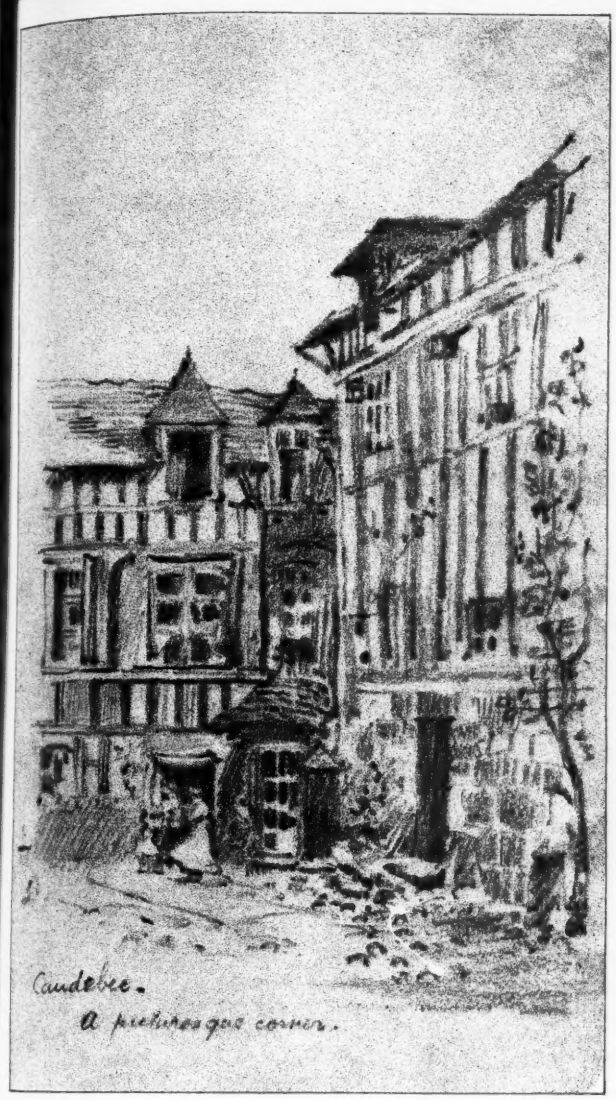

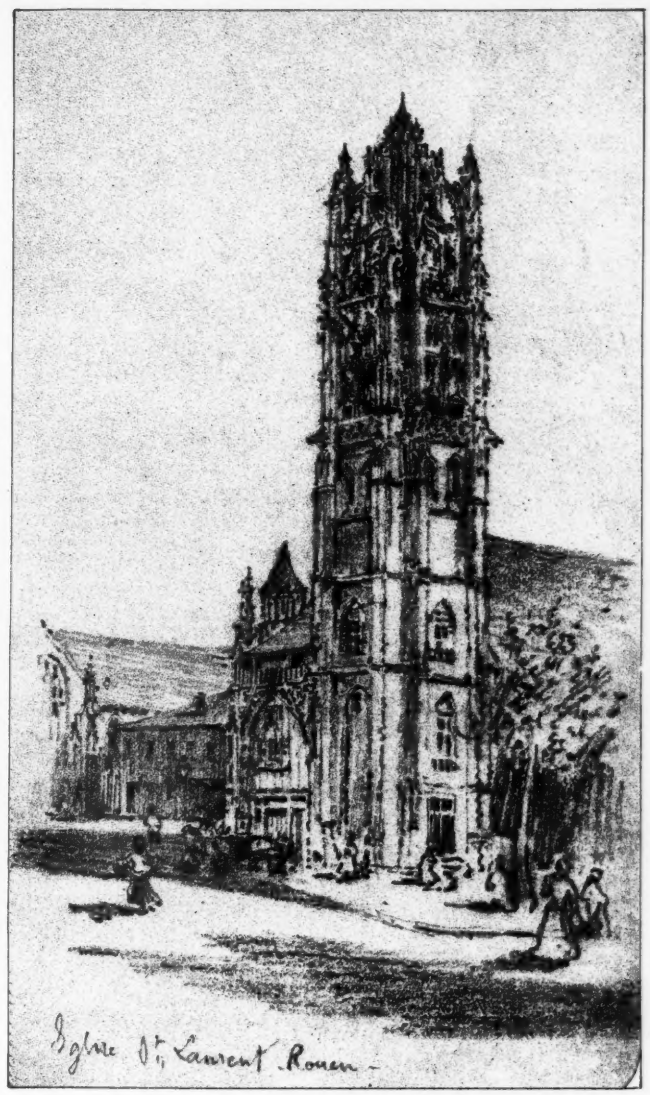

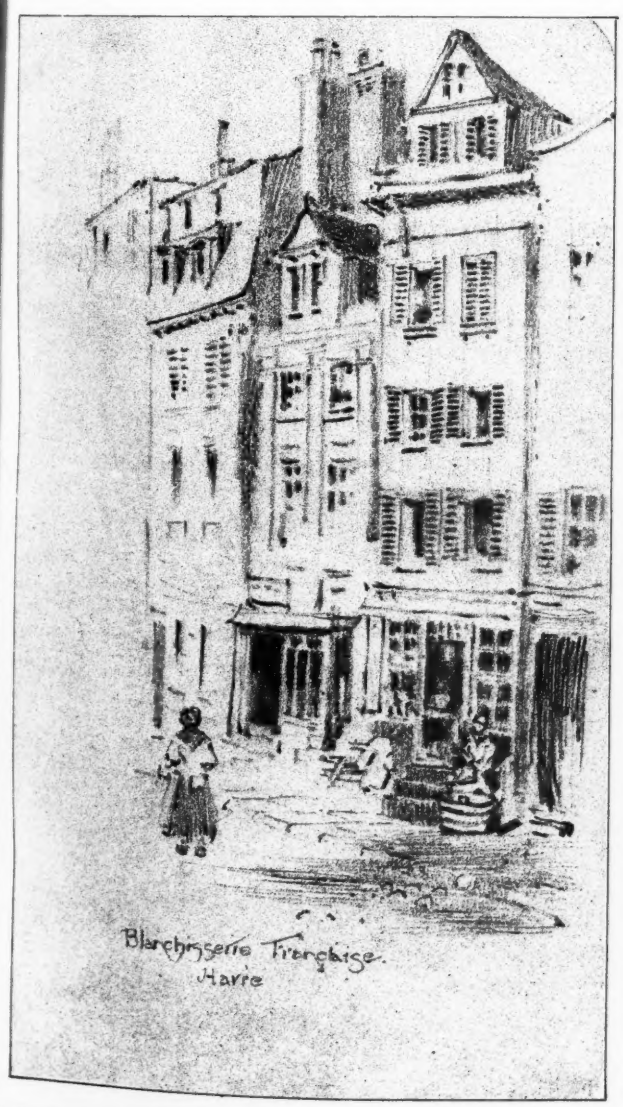

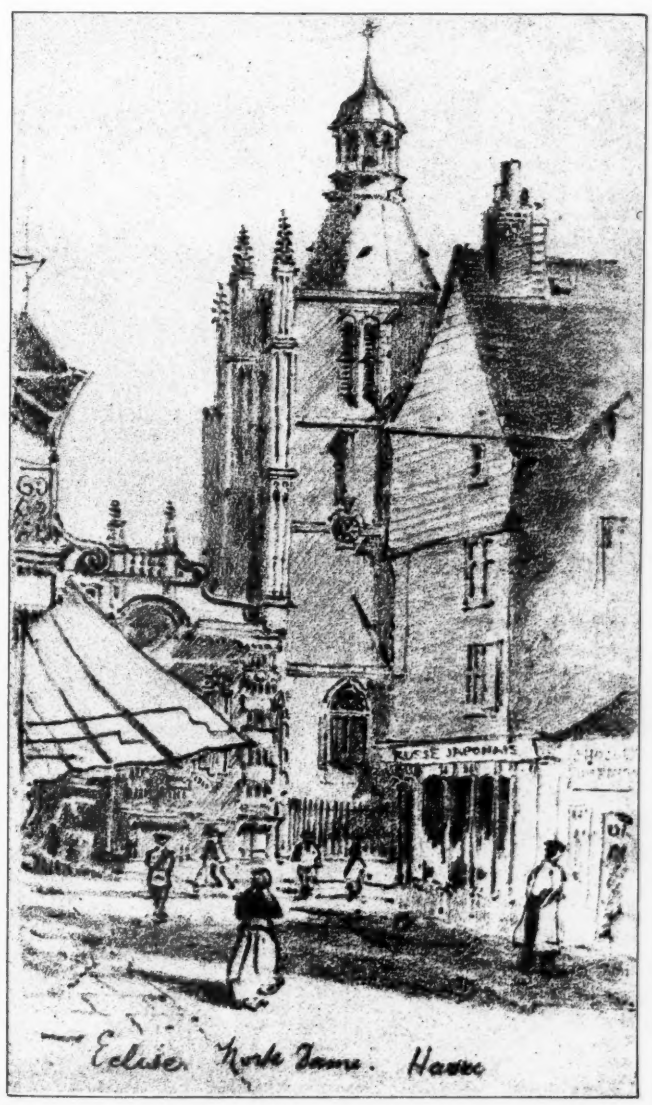

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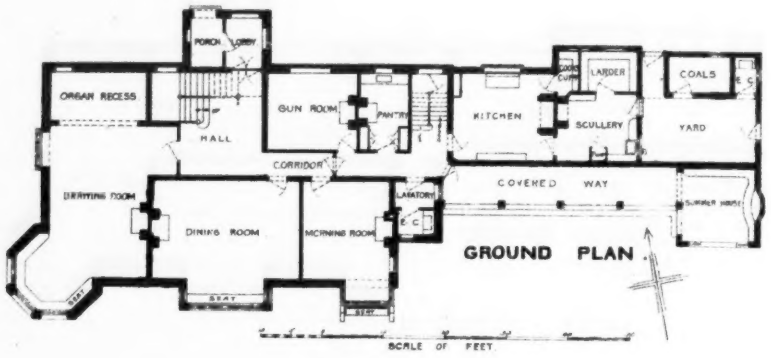

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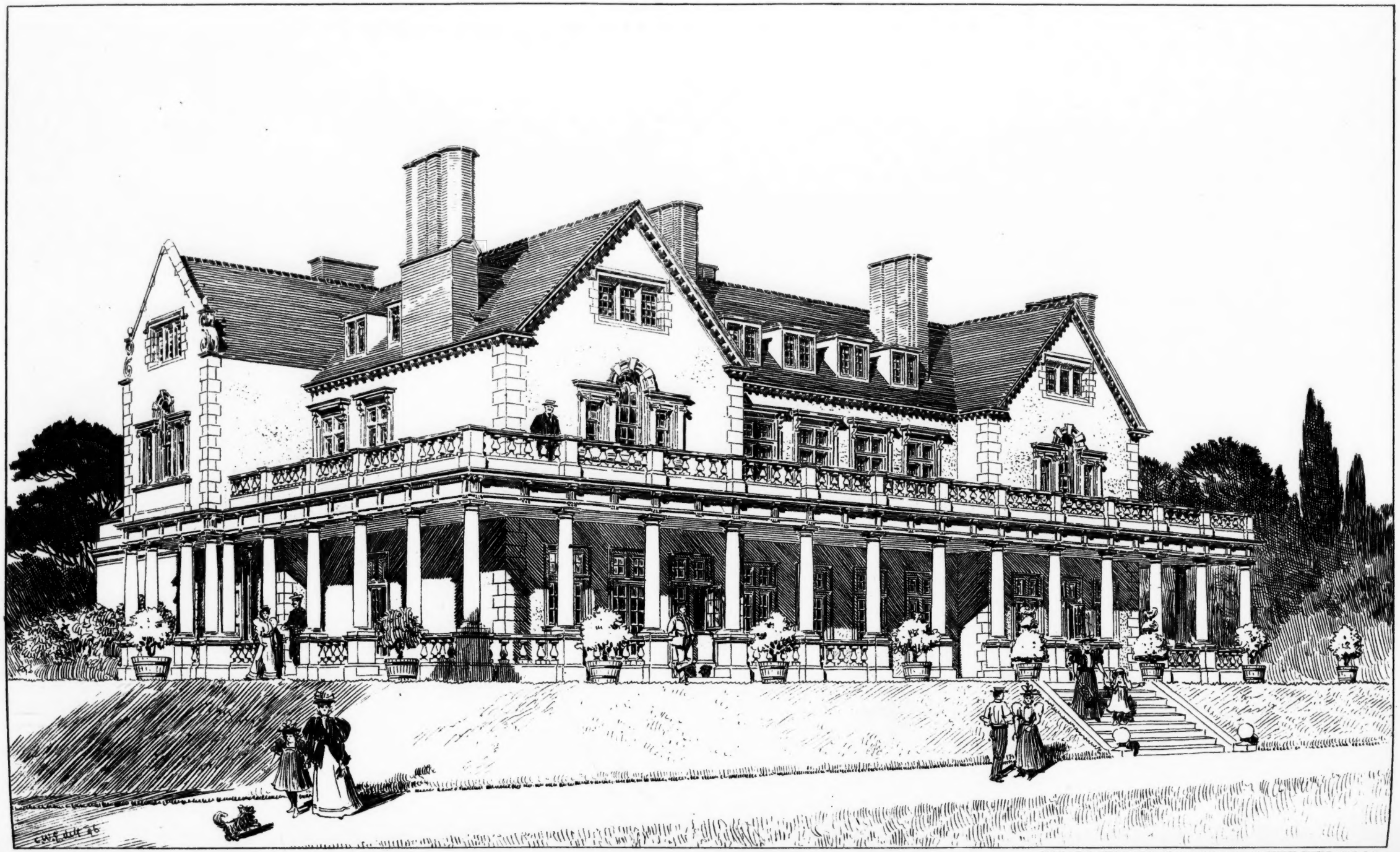

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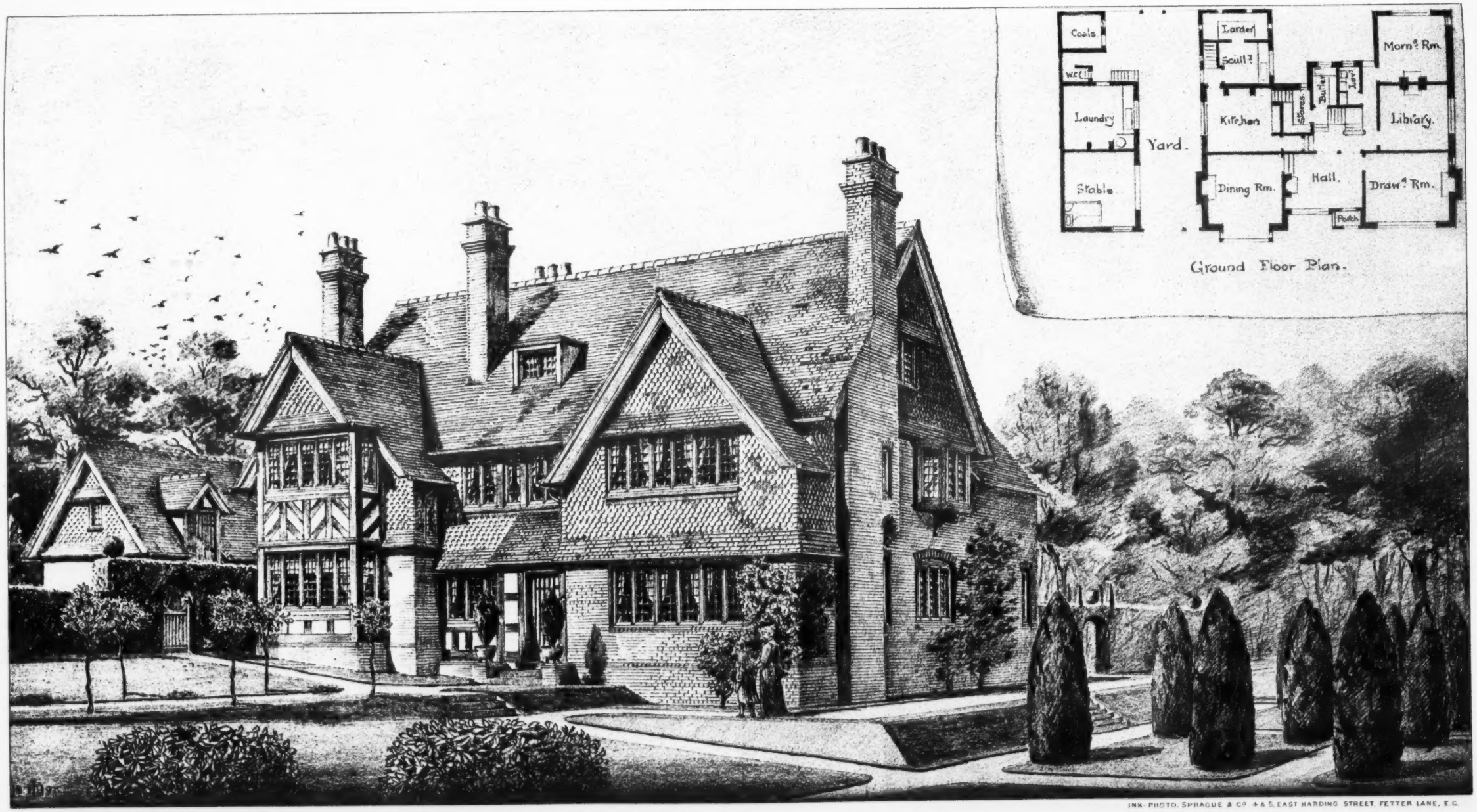

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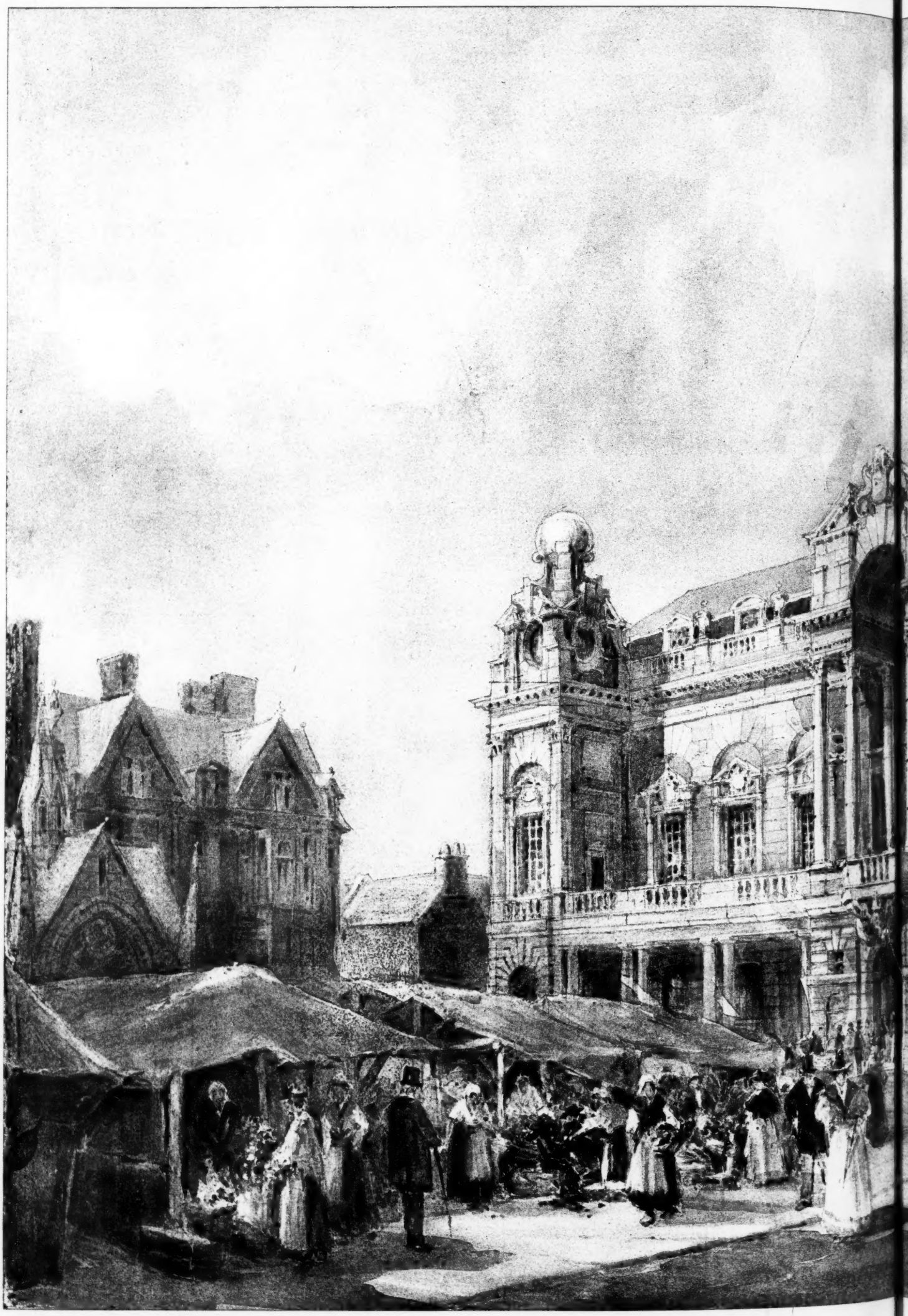

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